



November 27, 2002

By Electronic Delivery

Marlene H. Dortch, Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Re: *Written Ex Parte*
Review of the Section 251 Unbundling Obligations of Incumbent Local
Exchange Carriers – CC Dockets No. 01-338, 96-98, and 98-147

Dear Ms. Dortch:

WorldCom, Inc. (“WorldCom”) hereby submits this *ex parte* to address Bell Operating Company (“BOC”) assertions relating to cable telephony as a source of competition to traditional circuit-switched voice services.

In support of their claims that competitors are not impaired without access to the unbundled network element platform, the BOCs have repeatedly argued in the above-referenced proceeding that cable telephony is a viable source of competition to voice services offered by incumbent local exchange carriers (“LECs”). In doing so, they paint a picture of existing or imminent “burgeoning competition” resulting from cable telephony.¹ For example, Verizon asserts that “[c]able telephony already is available in numerous locations ... and it is indisputably a potent alternative to the [incumbent] LEC’s circuit-switched services.”² Additionally, SBC notes that “[w]idespread commercial deployment of cable IP [Internet Protocol] telephony is anticipated late this year or early in 2003.”³ As WorldCom highlighted in its comments, however, cable telephony is simply not the widespread, entrenched alternative to twisted-pair voice networks that the BOCs suggest.⁴ Two recent releases corroborate this fact.

First, the Commission itself recently held that, far from being an established competitor to incumbent LEC voice services, cable telephony remains very much in its infancy. Specifically, in the *AT&T-Comcast Merger Order*, released earlier this month, the Commission concluded that: “[b]ecause of the significant technical and operational uncertainties that remain

¹ See, e.g., Verizon Reply Comments at 106-107; see also SBC Comments at 74; Qwest Comments at 7; Verizon Comments at 123-124. (Unless otherwise indicated, all citations are to materials in CC Dockets No. 01-338, 96-98, and 98-147.)

² Verizon Reply Comments at 106.

³ SBC Comments at 74.

⁴ See WorldCom Comments at 35-37; WorldCom Reply Comments at 150-152.

in the commercial deployment of [IP] telephony ... we give minimal weight to Applicants' claim that the proposed transaction would accelerate deployment of cable telephony."⁵ Consequently, according to the Commission's own analysis, cable telephony cannot be the "widespread" alternative that the BOCs claim it to be.

Second, a recent Goldman Sachs report also concluded that cable telephony is no threat to incumbent LEC voice services. That report bluntly states that "VoIP [Voice Over Internet Protocol] remains a distant cloud on the [incumbent] LEC horizon" and concludes "we do not believe that [VoIP/cable telephony] poses a significant near- or medium-term threat to the [Regional] BOCs."⁶ One of the reasons cited for the slow growth of cable telephony is that cable owners have preferred to focus on their cash flow rather than upgrading and optimizing their networks for VoIP.⁷ Additionally, the report points out that current cable network operations are not well adapted for the "round-the-clock network vigilance" required to ensure 24-hour telephony – a service that customers have come to expect in traditional, circuit-switched voice networks.⁸

As these recent releases confirm, cable telephony does not provide a viable alternative to incumbent LEC voice services today, and it is simply not plausible that it will do so in the near future. Please do not hesitate to contact us if you have any questions.

Sincerely,

/s/ Kimberly Scardino
Kimberly Scardino
Dennis Guard
WorldCom, Inc.
(202) 736-6478

Attachment

cc:	Michelle Carey	Jeremy Miller	Thomas Navin
	Robert Tanner	Julie Veach	

⁵ *Applications for Consent to the Transfer of Control of Licenses from Comcast Corporation and AT&T Corp., Transferors, to AT&T Comcast Corporation, Transferee*, MB Docket No. 02-70, Memorandum Opinion and Order, ¶ 9 (rel. Nov. 14, 2002) ("*AT&T-Comcast Merger Order*") (FCC 02-310).

⁶ Global Telecom Weekly, North America, Goldman Sachs, at 1 (Nov. 22, 2002), attached as Exhibit A.

⁷ *Id.*

⁸ *Id.*

Exhibit A

US Spotlight

November 22, 2002

VoIP remains a distant cloud on the ILEC horizon. The US cable industry is approaching the end of its upgrade process, as major MSOs should end 2002 with 75-85% of their networks upgraded to 750MHz. From this level of capacity, MSOs could enable their networks to offer Voice Over Internet Protocol (VoIP) at a cost of approximately \$300-\$700 per subscriber (depending on whether the line has backup power). VoIP will allow MSOs to offer customers a suite of voice services similar to that of the local ILEC, including enhanced services such as CallerID, *69, and voice-mail. Presumably, this service would be bundled with programming and broadband packages for an attractive value proposition relative to standard ILEC service. The technology exists today and is in modest-sized trials, but spending cutbacks have delayed expansion market deployment, leading to flat total industry net adds in recent quarters. Therefore, we do not believe that it poses a significant near- or medium-term threat to the RBOCs. We expect wireless substitution and broadband proliferation to remain the two key drivers of access line deterioration.

Cable investors like technology but love free cash flow. Cable company valuations have suffered due to heightened focus on their free cash flow (or lack thereof) and high leverage in a difficult borrowing environment. The Goldman Sachs cable team maintains that until several companies are generating sustainable/improving free cash flow, the industry is likely to remain "under a cloud." While cable telephony is likely to be important in 2004 and beyond, the current focus on reducing capex limits the MSOs' focus on telephony.

24-hour telephony. Beyond financial constraints, MSOs need to adopt a strategy for telephony different from that of operating a cable service. The difference stems from the need for round-the-clock network vigilance to prevent telephone service outages; while brief network issues can interfere with programming without major churn, telephone customers are not likely to grant MSOs much leniency given the quality of the installed ILEC plant. Technology, such as Net2Phone's VoIP solution, already exists to monitor the network on a connection-by-connection basis, but the MSOs would need to come up the telephone service experience curve quickly to prevent churn-offs. This furthers our view that cable telephony is at most a modest near-term threat to the ILECs.

VoIP as a primary line? Another strategic issue for the MSOs is whether or not to deploy telephone service as a primary line (with back-up power), or as a second line. This is related to the network vigilance point above: while primary lines could offer more revenue, customers would likely be less demanding of the service as a second line. Given the current migration trend away from secondary wireline connections in favor of wireless, will customers of the future require primary lines to have power back-up and near-flawless service, or will wireless increasingly fill this primary "lifeline" role?

Price performance. North American telcos were up 9.0% during the week and significantly outperformed the S&P 500 (up 3.3%) and global telcos (up 5.1%). The group was led by Qwest, which rose 25.1% on news of a debt for debt exchange offer on \$12.9 billion of its Qwest Capital Funding (QCF) bonds. SBC was up 12.6% while BellSouth and Verizon were up 9.8% and 6.1%, respectively, as the valuation gap between the three closed slightly. In our global free cash flow yield rankings, SBC dropped from fourth to sixth and BellSouth moved from ninth to thirteenth, while Verizon rose from sixth to fifth. Based on our 2003 free cash flow estimates, Verizon yields 10.7%, SBC yields 10.6% and BellSouth yields 9.7%.

North American Outperform Stocks

Focus Stocks	Ticker	Price		Mkt. Cap. (\$mn)	Ent. Val. (\$mn)	EPS (\$)		EV/EBITDA (X)		P/E (X)		FCF yield	
		11/21/02				2002E	2003E	2002E	2003E	2002E	2003E	2002E	2003E
SBC Comm.	SBC	\$27.48		91,921	114,667	2.25	2.05	5.3	5.6	12.2	13.4	8.7%	10.6%
Verizon	VZ	\$40.64		111,719	162,115	3.04	2.93	5.6	5.5	13.4	13.8	11.6%	10.7%
CenturyTel	CTL	\$31.55		4,440	8,089	2.20	2.18	8.1	6.9	14.3	14.5	5.9%	8.5%

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Global Highlights

What is left post the rally and the earnings season? Since the beginning of the quarter, the sector has risen by 28% globally, driven by the US telcos (+35.9%) and European mobiles (+45.4%), while European incumbents performed in-line (+28.1%) and Asia and Japan underperformed. Incumbent 2003E FCF yields have converged from 12.5% and 8.3% in the US and Europe, respectively, to 9.9% and 7.7% on average, though in the US the RBOCs still have 2003E FCF yields of 10% and above. In Europe the only stock with a 2003E FCF yield of more than 10% is DT, though we have reiterated our In-Line rating on the stock this week given the substantial execution and refinancing risks the company is faced with.

Is there any upside left post this rally? We argue that upside is limited from here as most stocks, at least in Europe, are close to resistance levels, and the risks are on the downside. The risk profile of US and European telcos is quite different given that the rally in US telcos was actually a re-rating of the sector, taking yields from 12.5% to 7.7%, while share prices of European telcos have merely reacted rationally to increased profitability and substantially higher cash flows. Thus, European incumbent yields decreased only slightly from 8.3% to 7.7% and European wireless FCF yields remained unchanged at 4.2% despite the significant move in share prices. Thus, while the market is prepared to pay more for the US telcos relative to the beginning of October, pricing in expectations on favorable changes in regulation, European telcos have not become more expensive on a FCF yield basis.

European ARPU forecasts. However, the risks to European mobile valuations could be our ARPU forecasts despite the improvement of year-on-year ARPU growth from 1.4% in 2Q02 to 2.1% in 3Q02. After the launch of wireless data products by Vodafone and Orange, the impact on ARPUs by these products and MMS in particular is still unproven and a possible lack of positive announcements could well disappoint investors in 1Q03 and could bring down growth expectations.

Regulation. The RBOCs have mainly re-rated since the beginning of October after positive comments out of the FCC on likely regulatory changes with the publication of the regulatory review in January. However, given that current valuation levels of the RBOCs price-in a very favorable outcome of this review, anything less than that would clearly be a disappointment. In Europe, regulation will re-appear on the agenda soon, with new Dutch interconnect rates likely to be implemented in December, with the UK competition authorities publishing its findings on fair termination rates in January and the EU competition directive being implemented by the member states.

We thus believe that if the sector sustains current valuation levels throughout the rest of this year, concerns regarding mobile growth and uncertainty with respect to regulation could well be a drag on share prices in 1Q2003, similar to what happened at the beginning of this year, when concerns about subscriber growth, excessive US mobile competition and unfavorable regulation pushed down valuations.

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SBC (OP); 11/21/02: Telecom Services: SBC UNE-P proposal just first round in a complicated. Analyst: Frank Governali.

Q (U); 11/21/02: Q reflecting optimistic scenario for debt and ops; downside risk from here. Analyst: Frank Governali.

T (IL); 11/19/02: T (IL): Removing Not Rated status and re-instating investment rating with In-Line rating. Analyst: Frank Governali.

BLS (IL); 11/19/02: BLS (IL/N) No change in outlook resulting from analyst meeting. Analyst: Frank Governali.

What you need to know from last week

Broadband legislation is shaping up. We highlight three newsworthy items this week related to Broadband – (1) Defining broadband in terms minimum speeds, etc., (2) Using USF funding to support greater broadband rollouts, and (3) a new Bill designed to increase support for wireless 'Wi-Fi' broadband rollouts.

(1) Search continues for common broadband definition

While debates have increased about the necessity of a national broadband policy, now more than ever, policy-makers are searching for a broadband definition that is agreed upon nationwide. Currently, no common definition exists for minimum transmission speeds that constitute broadband. The FCC defines broadband as a service that can "support bi-directional data transmissions of at least 200K bit/sec." However, many in the industry contend that 1M bit/sec transmission speeds are needed to support true broadband services.

The Technology Network, a group of 300 telecom and infrastructure executives that lobbies the government on broadband and other technology-related issues, insists that "broadband should be a national imperative." As such, the group argues that a consistent definition of

broadband, followed by a widespread rollout that adheres to minimum speeds as dictated by the agreed-upon definition should be the primary policy focus.

The number of people subscribing to broadband services has, indeed, increased in the past two years by about 11 million people, bringing the current total to just over 17 million US subscribers. Yet realistically, broadband services are not as ubiquitous as many would hope. The main reasons: cost and availability. Where available, broadband generally costs upwards of \$40 per month, while dial-up is roughly half of this amount. On availability, coverage into suburban and rural areas must be extended. Policy makers are attempting to encourage this via subsidies, etc. However, a key obstacle has been defining what broadband actually is (in terms of minimum speeds per second), so carriers will know what they are receiving subsidies to build. Mass-market penetration, in our opinion, will ultimately depend on resolution of these two factors, requiring that (1) prices come down to levels close to where dial-up is currently priced, and (2) incentives for further deployment are created. In the interim, taking a step forward in the broadband debate is contingent upon finding a single definition of broadband, so policy makers can set subsidies and thereby foster wider-spread availability.

(2) FCC's Martin makes case for USF to remove certain broadband barriers

FCC Commissioner Kevin J. Martin argues that the FCC should consider issuing a notice of inquiry (NOI) to determine whether it would be useful to allocate some universal service funds to help remove broadband deployment barriers. This summer, the federal-state joint board on universal service recommended that universal service subsidies not be used for broadband services, but the proposed NOI would follow-up on and perhaps refute that recommendation. While Martin opposes widespread use of universal service funds (USF) for broadband deployment, he does adhere to the notion that there are certain scenarios, particularly when telephone network infrastructure build-out costs create an obstacle to broadband deployment, where it might make sense to encourage USF-based subsidies for this deployment. Martin also supports finding ways to apply USF to voice technologies that use the telephone network, like cable telephony and Internet Protocol. One suggestion he makes for such contributions is to base it on the number of telephone numbers a service provider assigns to its subscribers.

(3) "The Jumpstart Broadband Act" promotes Wi-Fi rollouts

Senators Barbara Boxer (D., CA) and George Allen (R., VA) stated that they would introduce a legislation to make more spectrum available for wireless broadband initiatives using Wi-Fi technology. The senators said that current proposals for broadband legislation focused only on DSL and cable modem services and overlooked other options, such as wireless broadband. Under their proposal, the FCC would be required to allocate, at minimum, 255 megahertz of contiguous spectrum below 6 gigahertz that would be used by Wi-Fi enabled devices, at no cost for the spectrum. The FCC would have 180 days to make the spectrum available once the bill was signed. The legislation would also mandate the National Telecommunications and Information Administration (NTIA) to draft rules for the use of the new spectrum, to ensure that it does not interfere with spectrum used by the Defense Department, or other agencies. The FCC would also be required to outline minimum standards for devices using the new spectrum.

This new legislation brings to light the growing focus on Wi-Fi technology, and highlights its increased functionality. We believe that Wi-Fi is a technology that is not necessarily a replacement for DSL or cable modem service, but a complement to it, because a high-speed landline connection, such as DSL or cable modem, is still needed to connect to the Wi-Fi base station in most instances. The increasing popularity of Wi-Fi may help drive DSL and cable modem rollouts. With this in mind, the carriers that can formulate a strategy to integrate Wi-Fi into their service offerings would be the best positioned to benefit from the new legislation, and the growing demand for wireless broadband.

Minnesota PUC delays ruling — sends Qwest “back to the drawing board” in CLEC interconnection hearing

Qwest avoided fines and a forced structural separation for at least 30 days, as the Minnesota state Public Utilities Commission ordered the company to redraft its proposed remedy for alleged misconduct related to interconnection pricing agreements it entered into with several competitors. Earlier in the year the Minnesota PUC was notified by the Department of Commerce that Qwest had entered into several interconnection agreements with a few select competitors, offering them discounts to the normal wholesale rate, while failing to file the agreements with the state PUC. Failure to notify the PUC constituted a violation of state law and the Telecom Act of 1996. As such, Qwest was mandated to present a remedy to the problem or face a penalty from the Commission. The company's offer, made on November 19, was that it would create 100 new jobs in the state, offer senior citizens free privacy products for two years, roll out DSL to six additional cities in the state, and offer all competitors a 10% discount on future purchases (equivalent to the discount offered the competitors in the un-filed agreements). Several parties involved had called for the Commission to fine Qwest between \$200-\$400 million, and/or enforce structural separation of retail and wholesale operations. However, on Tuesday the PUC did not impose a fine. Instead, it instructed Qwest to revise its proposal, incorporating more of the suggestions in the proposal from the state Attorney General (AG), and to use feedback from other competitors in the state. Qwest has 30 days to resubmit a revised plan.

Under the AG's proposal, Qwest would have to offer senior citizens free privacy services for a term of three years; and offer a 10% discount to all competitors. The PUC also suggested that Qwest come up with a method to grant all competitors the same terms that Qwest had given to the counter-parties in its unfiled connection agreements. If the PUC rules Qwest's revised proposal is not satisfactory, it could fine the company up to \$75 million. However, if the PUC accepts the revised plan, there may be no fine imposed at all. We believe that the PUC's order to revise its proposal could actually be a positive sign for Qwest, as it shows commitment by the PUC to working with Qwest to resolve the issue, rather than taking a heavy-handed immediate approach by fining Qwest. This provides Qwest with a reasonable chance of escaping a monetary penalty and would also allow avoidance of a structural separation. Continued flexibility on the part of the PUC will be critical in Qwest's 271 approval process in the state.

NARUC exhorts FCC to keep UNE-P control at the state level

The National Association of Regulatory Utility Commissioners (NARUC) sent a letter to the FCC urging it to remain committed to state control of UNE-P regulation. Fearing the FCC may alter current UNE-P rules and limit state input into future regulatory decisions, many state officials believe competition may be reduced following the FCC's triennial review. The state leaders argue that only state commissions can sufficiently analyze individual markets on a granular level, giving them the knowledge and ability to construct appropriate UNE-P rules. NARUC's letter comes shortly after the organization's annual convention, in which state regulators argued vehemently for the need for states to retain authority over competition.

NARUC also provided guidelines for the FCC in its triennial review process. Among other suggested guidelines, the FCC should: (1) not preempt state authority; (2) give states the ability to decide if a UNE element should be removed from the platform; and (3) certify that states can add elements back to the UNE list at their own discretion. Verizon issued statements indicating that state commissions should be involved in the rulemaking process, but some items should be classified as national in scope, in which case the FCC retains primary jurisdiction. For instance, Verizon maintains that “switching is a national market” that should be handled by the FCC on a national scale, not by state commissions. From NARUC's letter, states believe they should have the power to add and subtract specific UNEs such as switching because competition varies across states. The FCC is scheduled to release its triennial review findings on January 2, 2003.

News events

North Dakota Sen. Byron Dorgan is urging the FCC to take a more aggressive approach to promoting local competition. Speaking at a conference in Washington this week, Dorgan commented on the importance of upcoming FCC decisions on UNE-P and other competitive issues, saying that such legislation will determine the level of local competition in the local markets for coming years. The senator also said that he plans to pursue initiatives for broadband deployment in rural areas and legislation that allow for steep fines against companies for anti-competitive behavior.

Former New York City mayor Rudolph Giuliani's consulting firm, Giuliani Partners LLC, has agreed to work with Matlin Patterson Global Advisors LLC, a WorldCom creditor, to help in the WorldCom restructuring.

AT&T Wireless announced that Michael Keith will take over as president of AT&T Wireless Mobility Operations in January 2003, succeeding Mohan Gyani. Keith most recently led AWE's recently acquired TeleCorp operations. Gyani will continue to work with AWE as an advisor.

Nextel introduced its new Blackberry 6510 as part of its Wireless Business Solutions initiative. Offered at \$499.99, the 6510 is a wireless phone, PDA, and e-mail-enabled device that also has Nextel's Direct Connect ® service.

This week's global highlights

Europe

DT (IL): Debt reduction – no quick fix. DT's strategic review brought a change in emphasis but not direction, in our view. As DT does not have a liquidity crisis, a slow debt workout now looks the most likely scenario. With this in mind, we published a report in which we conduct a detailed review of DT's cost structure and identify EUR0.7 billion of possible net opex and EUR0.2 billion of capex savings relative to our forecasts. However, if pressed, DT could probably deliver an additional EUR1 billion capex cut in 2003 and 2004.

With 2002E and 2003E FCF yields of 11.8% and 10.0%, DT is trading at a discount to the sector. The modest cost saving measures we identify could boost these yields further but concerns about DT's debt maturities in 2003-04 of EUR23 billion, relative to the cumulative FCF of EUR9.3 billion and lack of a dividend, could put pressure on the shares. Thus, we reiterate our in-line rating on DT.

mmO2 (IL): New forecasts see lower peak net debt. We are updating our mmO2 forecasts, bringing down March, 2003, forecast net debt to £723 million from £1,016 million to reflect improved cash burn, and cutting forecast peak net debt to £1,155 million versus £1,485 million in 2004/05. The improving revenue performance in the United Kingdom is encouraging and the company is positioned to benefit from potential consolidation. However, investment timing is key as consolidation moves, if they come at all, are not likely to come before the company's UK risks come into focus with Hutch 3G's anticipated launch and a Competition Commission ruling due by early January, 2003. We retain our In-Line rating.

BT Group (IL): New forecasts published. We are publishing new forecasts for BT Group following the recent interim results announcement. We are lowering our revenue growth expectations to reflect the current trading outlook. The outlook for EBITDA remains broadly unchanged given the good progress against cost reduction targets but we have adjusted the EBITDA mix in favor of Retail and Wholesale (from Ignite). Recent share price performance reflects, in our view, the improving visibility on earnings growth and the expectation of further improvements to dividend payout levels. We believe the company could support such a move, but only if concerns over pensions exposure and mobile cannibalization prove immaterial. Dividend and FCF yields have fallen but the relative position against the sector is unchanged. Remains IL.

Vodafone (OP): Broad forecast upgrade post interims. We are upgrading our forecasts for Vodafone to reflect the strong performance shown at the interims. Forecast pre-amortization EPS for 2002/03 rises 11.6% to 6.27p/share and for 2003/04 by 16.7% to 6.95p. We expect seasonality and the 3G launch in Japan to depress margins in 2H02/3 slightly versus 1H bringing the proportionate cellular EBITDA margin to an estimated 36.7% in 2H versus 39.0%. Forecast proportionate EBITDA for 2002/03 rises 5.6% to £12,203 million and for 2003/04 rises 6.7% to £13,528 million. We retain our Outperform rating.

Asia-Pacific

Hutchison: 3G roadmap report, Part 3—United Kingdom and Italy: the white-knuckle ride. We have just issued part three of our Hutchison Whampoa 3G roadmap series, entitled "UK and Italy 3G: The white-knuckle ride." On November 13, "3" kicked off its European campaign by announcing initial tariff plans in Italy. Following recent meetings with 3G management in London and Milan, we examine the bull and bear cases for the United Kingdom and Italy, Hutchison's make-or-break 3G markets in Europe. Our 12-month price target of HK\$58 is premised on a 20% discount to our 12-month forward NAV estimate of HK\$72. Key risks to our target include: (1) further downside in TMT valuations; (2) disappointing consumer response to 3G services in Europe; (3) double-dip recession in 2003. That said, we reaffirm our Outperform rating on the stock, with a 12-month view.

KT: capex forecasts lowered as company sticks to guided W2.5 trillion for 2002.

Following KT Corp.'s 3Q2002 result we have lowered our EBITDA forecasts 4.6% or W219 bn to W4,538 tn in 2002, and 5.6% or W287 bn in 2003 to W4,863 tn, after lowering our Land to Mobile revenue forecasts. However, as the company has maintained its full-year 2002 capex guidance of W2.5 tn, we have reduced our capex assumptions in 2002 by W510 bn to W2.50 tn from W3.01 tn (based on KT's original budget), and in 2003 by W493 bn to W2.36 tn from W2.86 tn. Due to lower depreciation and donation expenses, our 2002 earnings forecast has increased 8.1% or W97 bn to W1,297 tn and in 2003 by 8.1% or W103 bn to W1,379 tn. We reiterate our Outperform rating and Current Investment List designation on the stock in the context of a cautious outlook for the Asian telco sector. We maintain our DCF-based 12-month target price of W70,000 (US\$28.50), the key risks to which include capex, free cash flow usage priorities, call tariffs, and volumes.

Korea Mobile: 7.3% headline tariff cut; maintain our 4% assumption. On November 16, the MIC finalized its proposal for SK Telecom's (SKT) (OP) standard tariff plan to fall 7.3% from the beginning of 2003. Although final approval for these tariff cuts rests with the MOFE, we see this largely as a procedural matter. As the announced tariff cuts only applies to SKT's standard tariff plan (35%-40% of total subscribers), at the moment we see no reason to change our assumed effective tariff cut of 4% from January 1, 2003 for all three mobile operators and KT Corp.'s (CIL/OP) land-to-mobile (LM) tariff, but there is a risk this 7.3% cut could end up being applied across a wider number of SKT's tariff plans. We retain our Cautious sector view.

China Unicom: acquisition in line; reiterate Underperform and HK\$5.40 target.

China Unicom has announced it is buying nine new cellular networks for Rmb4.8 bn in equity plus Rmb17.7 bn in assumed debt for a total EV of Rmb22.5 bn. We believe the price is in line with market expectations. The reported pro forma benefit to 2003 EPS as provided by the company is 8.7%. Although positive, the transaction does not have enough weight to change our cautious outlook on the sector or the stock as we continue to see important downside risk to fundamentals from rising competitive subscriber acquisition policy in the near term and from likely new cellular licenses over the next one to two years. We maintain our Underperform rating on the stock and reiterate our HK\$5.40 DCF-based target price. Upside risks to this are lower capex and good CDMA sub retention.

Latin America

Brazilian PCS auction negative for sector, creates entry points for AMX and BRP

The success of the Brazilian PCS auction increases competition, raises capex and is negative for wireless consolidation. However, in our view, the market overreacted, creating an attractive entry point for America Movil and Brasil Telecom shares.

Success of PCS auction raises concerns...

We think that the outcome of PCS auction will have the following key effects on the telco sector:

- Increased competition in wireless as we move to a four-player market;
- Increased capex for winners of licenses and reductions in near-term cash flow;
- Stimulation of some wireless players to start the GSM overlay sooner rather than later; and
- Negative implications for consolidation because some players have already satisfied their appetite for buying PCS licenses.

Therefore, we think that the PCS auction as a whole was negative for the telco sector. However, the outcome was not too far from expectations and in our view, stock prices already discount most of these concerns.

... but recent weakness creates attractive entry point for AMX and BRP shares

We think that the initial impact of the acquisition of PCS licenses is negative for both Brasil Telecom and America Movil because in the short term, it means lower free cash flow. However, we think that the market overreacted and, in our view, this creates an attractive entry point for Brasil Telecom and America Movil shares. We reiterate our Outperform rating for both America Movil and Brasil Telecom shares.

PCS auction summary. The Brazilian government sold nine out of ten PCS licenses auctioned on November 19, with the process being a big success for Anatel. Lower prices and better payment conditions attracted buyers. However, low premiums to the minimum price indicate that buyers are continuing to act rationally.

Auction winners. There were four bidders in total: Telemar, Brasil Telecom, America Movil and Vesper. Telemar was the only company that did not acquire any licenses. Brasil Telecom acquired licenses in its own concession area, while Vesper acquired licenses in the São Paulo countryside, Minas Gerais and the Northeast. America Movil acquired licenses in the São Paulo metropolitan area, Paraná/Santa Catarina (TSU area) and Bahia/Sergipe (TBE area).

Upcoming Events – Global

November

Mon	Tue	Wed	Thur	Fri
25-Nov	26-Nov	27-Nov	28-Nov	29-Nov
Week of Nov 27: Telekom Malaysia	Kingston Comm. 1H Telekom Malaysia 3Q	Maxis 3Q		

December

Mon	Tue	Wed	Thur	Fri
2-Dec	3-Dec	4-Dec	5-Dec	6-Dec
9-Dec	10-Dec	11-Dec	12-Dec	13-Dec
			Sprint Analyst meeting	
16-Dec	17-Dec	18-Dec	19-Dec	20-Dec
		BCE Analyst meeting		
23-Dec	24-Dec	25-Dec	26-Dec	27-Dec
30-Dec	31-Dec	1-Jan	2-Jan	3-Jan

Free cash flow yield global rankings

Rank	Company	FCF yield 02E		FCF yield 03E		FCF yield 04E		Total Score
1	Telmex (OP/CIL, \$31.00)	14.4%	48	14.4%	48	15.6%	48	96
2	KT (OP/CIL, Won53,400)	7.9%	47	12.5%	46	14.8%	46	93
3	Qwest (U, \$4.64)	0.8%	46	12.4%	44	12.9%	44	90
4	PCCW (IL, HK\$1.33)	9.5%	45	11.8%	45	14.1%	45	90
5	Verizon (OP, \$40.64)	11.6%	44	10.7%	41	10.9%	41	85
6	SBC Communications (OP, \$27.48)	8.7%	43	10.6%	38	10.5%	38	81
7	OTE (IL, €10.60)	3.1%	40	9.9%	40	10.9%	40	80
8	Telenor (IL, Nkr27.50)	NA	33	8.4%	47	15.4%	47	80
9	NTT (OP/CIL, Y450,000)	7.7%	42	10.6%	36	10.1%	36	78
10	SK Telecom (OP, Won243,500)	8.7%	39	9.7%	37	10.3%	37	76
11	KDDI (IL, Y358,000)	NA	34	8.5%	42	11.9%	42	76
12	TDC (OP, Dkr198.00)	6.5%	37	9.0%	39	10.8%	39	76
13	BellSouth (IL, \$27.45)	11.0%	38	9.7%	34	9.7%	34	72
14	Deutsche Telekom (IL, €12.10)	12.0%	41	10.2%	31	9.0%	31	72
15	KT Freetel (OP, Won30,800)	2.0%	26	7.0%	43	12.0%	43	69
16	Swisscom (OP, Sfr441.50)	8.0%	35	8.5%	32	9.1%	32	67
17	CenturyTel (OP, \$31.55)	5.9%	36	8.5%	29	8.4%	29	65
18	Telefonica (OP, €10.01)	6.6%	32	8.3%	33	9.5%	33	65
19	Portugal Telecom (OP, €6.72)	8.5%	28	7.5%	35	10.0%	35	63
20	SmarTone (OP, HK\$8.60)	5.2%	31	7.9%	28	8.3%	28	59
21	Telecom New Zealand (IL, NZ\$4.69)	4.4%	29	7.7%	30	8.5%	30	59
22	Libertel (OP, €9.44)	9.0%	30	7.8%	23	7.7%	23	53
23	KPN (OP, €6.42)	6.8%	24	6.8%	27	8.2%	27	51
24	BT Group (IL, £2.19)	2.7%	25	6.8%	26	8.2%	26	51
25	Telstra (OP, A\$4.51)	7.1%	27	7.4%	22	7.6%	22	49
26	BCE (IL, \$18.17)	2.5%	22	6.3%	25	8.1%	25	47
27	Taiwan Cellular (IL, NT\$28.00)	0.9%	23	6.7%	21	7.5%	21	44
28	Far EasTone (IL, NT\$27.30)	NA	14	4.4%	24	7.9%	24	38
29	ALLTEL (U, \$53.66)	7.1%	20	5.9%	18	6.6%	18	38
30	China Mobile (HK) (U, HK\$20.60)	NA	17	5.0%	20	7.4%	20	37
31	Telecom Italia (IL, €8.39)	5.4%	21	6.1%	16	6.3%	16	37
32	Panafon (IL, €5.66)	3.3%	19	5.6%	15	6.1%	15	34
33	Mobistar (OP, €23.87)	3.9%	16	5.0%	17	6.5%	17	33
34	France Telecom (U, €14.01)	1.5%	12	3.8%	19	6.7%	19	31
35	Singapore Telecom (IL, S\$1.35)	NA	15	4.9%	13	5.7%	13	28
36	Telefonica Moviles (IL, €7.19)	5.1%	18	5.4%	9	5.1%	9	27
37	Vodafone (OP, £1.26)	4.4%	13	4.1%	10	5.1%	10	23
38	NTT DoCoMo (IL, Y224,000)	2.2%	8	2.4%	14	5.9%	14	22
39	Telecel (IL, €8.25)	1.7%	10	3.1%	12	5.6%	12	22
40	Europolitan (OP, SKr48.90)	2.9%	11	3.6%	11	5.6%	11	22
41	Telecom Italia Mobile (OP, €5.32)	2.0%	9	2.8%	8	3.4%	8	17
42	LG Telecom (U, Won4,810)	NA	6	0.0%	5	1.9%	5	11
43	AT&T Communications (NR, \$28.00)	1.6%	7	0.8%	3	1.3%	3	10
44	China Unicom (U, HK\$5.60)	NA	0	NA	7	2.8%	7	7
45	Orange SA (U, €7.00)	NA	0	NA	6	2.1%	6	6
46	Telia (NR, SKr35.20)	NA	0	NA	4	1.5%	4	4
47	Japan Telecom Holdings (U, Y378,000)	NA	0	NA	2	0.3%	2	2
48	mmO2 (IL, £0.55)	NA	0	NA	0	NA	0	0

Source: Bloomberg, Goldman Sachs Research estimates

Note: For KPN, the 03E FCF yield has been used instead of 02E yield

Global incumbent wireline valuations

Last update 21 November 2002		Rating/CIL	Price	Mkt. Cap. (US\$m)	Ent. Val. (US\$m)	EV/EBITDA (X)		EBITDA		P/E (X)	3-yr EPS		3-yr Rev.		FCF yield (x)		3-yr FCF Div.			
						2002E	2003E	2004E	02-05E		2002E	2003E	2004E	02-05E	2002E	02-05E	2002E	02-05E	2002E	02-05E
North America																				
Alaska Communications	IL	\$2.00	63	641	5.0	4.8	4.7	3.6%	1.4	NM	NM	14.5	NM	NM	1.8%	NA	3.1%	1.4%	NM	0.0%
ALLTEL	U	\$53.66	16,742	23,113	7.4	6.6	6.3	3.8%	1.9	16.6	15.8	15.4	2.7%	6.2	2.8%	7.1%	5.9%	6.6%	-1.8%	2.6%
BCE	IL	\$18.17	16,469	27,656	5.8	5.4	4.9	6.0%	1.0	16.4	14.7	12.6	14.8%	1.1	3.2%	2.5%	6.3%	8.1%	-55.2%	6.6%
BellSouth	IL	\$27.45	51,489	65,251	5.2	4.9	4.7	-0.3%	(17.0)	13.2	13.5	13.4	(0.4%)	(37.6)	-1.2%	11.0%	9.7%	9.7%	-5.8%	2.9%
CenturyTel	OP	\$31.55	4,440	8,089	8.1	6.9	6.3	7.3%	1.1	14.3	14.5	14.0	2.1%	6.9	7.0%	5.9%	8.5%	8.4%	12.1%	0.7%
Commonwealth	IL	\$37.06	878	1,033	6.6	6.0	5.5	6.1%	1.1	16.8	16.1	15.1	5.7%	2.9	2.8%	5.6%	7.7%	8.4%	19.0%	0.0%
Qwest	U	\$4.64	7,806	29,882	5.6	5.0	4.9	-2.1%	(2.6)	NM	NM	71.7	NM	NM	-5.5%	0.8%	12.4%	12.9%	NM	0.0%
SBC Communications	OP	\$27.48	91,921	114,667	5.3	5.6	5.5	-0.2%	(33.9)	12.2	13.4	12.9	0.1%	186.7	0.3%	8.7%	10.6%	10.5%	3.9%	3.9%
Sprint FON Group	U	\$14.05	12,576	16,854	3.7	3.4	3.0	2.9%	1.3	10.5	10.3	10.3	2.0%	5.4	0.6%	19.1%	9.0%	12.9%	-11.3%	3.6%
Verizon	OP	\$40.64	111,719	162,115	5.6	5.5	5.4	0.9%	6.6	13.4	13.8	13.5	0.8%	16.3	1.2%	11.6%	10.7%	10.9%	-1.9%	3.8%
Average/Total			418,368	576,328	6.2	5.9	5.6	2.5%	(4.4)	14.2	14.0	19.3	3.5%	23.5	1.0%	7.4%	7.7%	8.3%	7.3%	2.2%
Weighted Average					6.6	6.7	6.5	0.4%	(10.0)	13.2	13.7	14.7	1.3%	56.4	0.0%	7.8%	7.7%	8.0%	0.6%	2.8%
Developed Europe																				
BT Group	IL	£2.19	29,866	46,964	5.2	4.8	4.5	2.8%	2.0	17.8	14.5	12.9	14.5%	1.2	2.3%	2.7%	6.8%	8.2%	51.2%	2.2%
Deutsche Telekom	IL	€12.10	50,913	116,073	7.2	6.5	6.0	5.5%	1.3	NM	NM	30.5	NM	NM	3.3%	12.0%	10.2%	9.0%	-8.1%	0.0%
France Telecom	U	€14.01	16,876	102,393	7.2	6.6	6.2	7.4%	1.0	NM	27.4	20.2	NM	NM	4.6%	1.5%	3.8%	6.7%	67.6%	0.0%
KPN	OP	€6.42	16,029	29,592	6.9	6.7	6.4	2.2%	3.1	NM	39.7	24.9	NM	NM	0.6%	10.9%	6.8%	8.2%	-6.4%	0.0%
OTE	IL	€10.80	5,216	7,931	4.4	4.1	3.9	1.6%	2.7	8.8	8.7	8.7	0.5%	17.8	3.5%	3.1%	9.9%	10.9%	58.5%	6.6%
Portugal Telecom	OP	€6.72	8,452	15,134	6.9	7.0	6.4	3.7%	1.9	16.3	15.6	15.4	3.9%	4.2	2.8%	8.5%	7.5%	10.0%	11.5%	2.4%
Swisscom	OP	SFr441.50	19,935	23,423	7.5	7.0	6.6	2.7%	2.8	14.0	12.8	11.9	7.8%	1.8	2.3%	8.0%	8.5%	9.1%	4.2%	3.6%
TDC	OP	DKr198.00	5,784	9,213	4.8	4.9	4.4	7.3%	0.7	10.8	9.8	8.3	15.8%	0.7	3.9%	6.5%	9.0%	10.8%	25.4%	5.8%
Telecom Italia	IL	€6.39	55,338	92,035	6.9	6.7	6.4	2.1%	3.3	21.9	19.7	18.3	8.3%	2.6	2.1%	5.4%	6.1%	6.3%	8.6%	3.7%
Telefonica	OP	€10.01	47,563	77,508	6.6	6.4	5.8	2.9%	2.3	30.3	19.9	17.5	28.4%	1.1	3.1%	6.6%	8.3%	9.5%	16.5%	0.0%
Telenor	IL	NKr27.50	6,786	8,876	5.0	4.2	3.5	10.6%	0.5	12.0	8.2	7.5	17.0%	0.7	7.2%	NA	8.4%	15.4%	NM	1.3%
Telia	NR	SKr35.20	11,814	12,384	7.8	7.3	6.5	8.8%	0.9	30.9	21.1	16.3	25.6%	1.2	3.1%	NA	NA	1.5%	NA	0.6%
Average/Total			274,373	541,527	6.4	6.0	5.5	4.8%	1.9	18.1	17.9	16.0	13.5%	3.5	3.2%	6.5%	7.8%	8.8%	22.9%	2.2%
Weighted Average					6.7	6.3	5.9	4.0%	2.1	21.8	19.5	19.0	15.4%	2.2	2.8%	7.0%	7.7%	8.2%	15.8%	1.6%
Emerging Europe																				
Cesky Telecom	U	Kc267.67	2,820	3,147	3.6	3.4	3.3	-5.2%	(0.7)	15.8	17.0	18.8	(3.0%)	(5.3)	-1.4%	11.7%	13.0%	12.6%	2.1%	0.0%
Matav	IL	HUF838	3,676	5,241	5.0	4.3	3.9	3.4%	1.5	8.6	7.6	7.4	5.1%	1.7	3.2%	9.8%	11.8%	13.9%	13.5%	1.3%
Telekomunikacja Polska	U	Plz13.70	4,864	9,401	5.0	4.6	4.2	4.1%	1.2	37.0	14.9	12.5	36.0%	1.0	2.0%	0.2%	5.4%	8.6%	289.6%	0.0%
Average/Total			11,360	17,789	4.5	4.1	3.8	0.8%	0.7	20.4	13.1	12.9	12.7%	(0.9)	1.3%	7.2%	10.1%	11.7%	101.7%	0.4%
Weighted Average					4.6	4.2	3.9	1.6%	0.8	22.5	13.0	12.4	16.3%	(0.3)	1.5%	6.2%	9.4%	11.3%	128.9%	0.4%
Developed Asia																				
KT	OP/CIL	Won53,400	13,603	22,425	4.3	3.7	3.2	6.6%	0.7	13.4	10.0	7.9	27.7%	0.5	3.9%	7.9%	12.5%	14.8%	27.7%	3.0%
KT ADR	OP/CIL	\$22.45	13,878	22,700	4.4	3.7	3.3	6.6%	0.7	13.7	10.2	8.1	27.7%	0.5	3.9%	7.8%	12.3%	14.6%	27.7%	1.5%
PCCW	IL	HK\$1.33	3,934	7,408	7.4	6.6	5.6	6.7%	1.1	12.0	9.5	6.0	33.0%	0.4	2.2%	9.5%	11.8%	14.1%	18.9%	0.0%
Singapore Telecom	IL	S\$1.35	13,599	16,634	8.0	7.1	6.6	8.3%	1.0	11.7	11.8	10.9	6.8%	1.7	7.1%	NA	4.9%	5.7%	NM	4.1%
Telstra	OP	A\$4.51	32,664	38,263	7.0	6.4	6.1	4.2%	1.7	15.3	14.2	13.4	5.8%	2.6	2.7%	7.1%	7.4%	7.6%	4.1%	5.0%
Telecom New Zealand	IL	NZ\$4.69	4,433	7,414	8.0	6.2	5.8	10.8%	0.7	36.0	12.6	11.7	51.0%	0.7	1.3%	4.4%	7.7%	8.5%	29.3%	4.3%
Average/Total			68,232	92,143	6.9	6.0	5.5	7.3%	1.0	17.7	11.6	10.0	24.9%	1.2	3.5%	7.2%	8.9%	10.2%	20.0%	3.3%
Weighted Average					6.3	5.6	5.2	6.2%	1.1	15.1	12.1	10.7	17.0%	1.5	3.8%	7.3%	8.9%	10.0%	16.1%	3.8%
Emerging Asia																				
MTNL	OP	Rs100.95	1,189	790	1.9	1.7	1.1	11.8%	0.2	6.3	5.8	4.6	14.8%	0.4	6.3%	3.4%	7.1%	20.0%	94.1%	4.5%
PLDT	IL	Ps255.00	804	3,798	4.8	4.2	3.6	7.8%	0.6	9.1	6.0	4.1	46.1%	0.2	7.7%	13.0%	24.9%	30.9%	40.9%	0.0%
Telkom	OP	Rp3,275	3,660	4,429	2.9	2.4	1.8	20.9%	0.1	3.9	4.7	3.5	8.6%	0.5	19.9%	8.0%	16.0%	26.9%	63.2%	6.4%
Telekom Malaysia	NR	Rm7.20	5,869	6,880	5.9	5.4	4.9	2.7%	2.1	18.7	16.5	14.5	13.0%	1.4	2.5%	5.0%	8.2%	8.5%	24.8%	1.1%
VSNL	IL	Rs93.85	555	120	0.4	0.4	0.5	-24.7%	(0.0)	2.8	4.6	6.8	(27.9%)	(0.1)	-19.3%	34.0%	22.7%	11.4%	-42.4%	31.3%
Average/Total			12,077	16,017	3.2	2.8	2.4	3.7%	0.6	8.2	7.5	6.7	10.9%	0.5	3.4%	12.7%	15.8%	19.5%	36.1%	8.7%
Weighted Average					4.3	3.8	3.3	8.2%	1.1	11.6	10.7	9.2	12.2%	0.9	7.5%	7.6%	12.2%	16.8%	41.3%	4.3%
Japan																				
Japan Telecom Holdings	U	Y378,000	9,844	27,311	7.6	7.7	7.4	6.3%	1.2	20.1	19.2	19.8	1.3%	15.9	3.7%	NA	NA	0.3%	NM	0.2%
KDDI	IL	Y358,000	11,474	21,464	4.9	5.7	5.1	1.4%	3.6	31.2	30.4	20.6	19.4%	1.6	-0.7%	NA	8.5%	11.9%	NM	0.5%
NTT	OP/CIL	Y450,000	59,176	147,972	5.6	4.9	4.4	3.1%	1.8	14.2	14.2	12.6	9.3%	1.5	2.2%	7.7%	10.6%	10.1%	6.9%	1.1%
Average/Total			80,494	196,747	6.1	6.1	5.7	3.6%	2.2	21.8	21.3	17.7	10.0%	6.3	1.7%	7.7%	9.5%	7.4%	6.9%	0.6%
Weighted Average					5.8	5.3	4.9	3.2%	2.0	17.3	17.1	14.6	9.8%	3.3	1.9%	7.7%	10.2%	9.2%	6.9%	0.9%
Latin America																				
CanTV	OP	\$13.18	1,482	1,780	2.3	2.3	1.9	-3.3%	(0.7)	NM	23.1	17.5	NM	NM	-7.4%	36.1%	26.6%	26.8%	-10.7%	15.7%
Brasil Telecom	OP	\$26.10	1,905	2,424	3.0	2.4	2.0	7.8%	0.4	13.5	8.4	5.8	40.5%	0.3	7.3%	28.8%	35.3%	45.8%	22.9%	1.9%
Embratel	IL	\$0.75	250	1,582	2.7	2.3	1.9	16.7%	0.2	99.4	49.6	1.7	NM	NM	0.9%	3.3%	1.2%	60.2%	NM	0.3%
Telemar	IL	\$7.53	2,848	6,529	3.9	3.3	2.5	6.5%	0.6	26.7	15.0	6.1	85.2%	0.3	4.7%	20.0%	34.3%	43.2%	35.9%	6.5%
Telmex	OP/CIL	\$31.00	20,057	25,008	4.2	4.1	3.6	0.6%	7.2	10.5	10.1	8.5	13.3%	0.8	2.2%	22.9%	14.4%	15.6%	-15.7%	2.8%
Average/Total			26,542	37,323	3.2	2.9	2.4	5.7%	1.5	37.5	21.2	7.9	46.3%	0.5	1.5%	22.2%	22.4%	38.3%	8.1%	5.4%
Weighted Average					4.0	3.7	3.3	1.7%	5.5	13.5	11.6	8.5	23.7%	0.7	2.3%	23.6%	18.6%	21.8%	(7.1%)	3.8%
Incumbent Wireline Average/Total																				
Incumbent Wireline Weighted Average/Total																				

Source: Bloomberg, Goldman Sachs Research estimates

Multiples in this valuation table may NOT be directly comparable to figures in our research due to definition differences. In this table,

1. We define enterprise value as market capitalization + net debt + minorities – associates
2. EPS figures have been adjusted to exclude goodwill amortization and exceptionals
3. FCF is defined as EBITDA less capex, change in working capital, interest paid and tax paid

Global incumbent wireline operating statistics

	3-yr CAGR (%) 2002E-2005E				Group Margins (%) 2002E				EBITDA estimates		Adj. EPS		Net debt	Net debt	Net debt	Capex	Capex/	FCF	EV/line
	Sales	EBITDA	EPS	FCF	EBITDA	Net	FCF	FY2002E	FY2003E	FY2002E	FY2003E	FY2002E	(US\$m)	/EV (%)	EBITDA	(US\$m)	sales(%)	(US\$m)	(US\$)
North America																			
Alaska Communications	1.8%	3.6%	NM	NM	37.2%	(1.4%)	(4.0%)	128	133	(0.21)	(0.07)		578	90.1%	4.5	79	22.9%	(14)	1,902
ALLTEL	2.8%	3.8%	2.7%	(1.8%)	39.1%	12.7%	14.9%	3,112	3,414	3.23	3.40	6,371	27.6%	2.0	1,265	15.9%	1,185	7,336	
BCE	3.2%	6.0%	14.8%	55.2%	38.6%	7.7%	3.6%	7,528	7,878	1.75	1.96	9,902	35.8%	2.1	2,396	19.4%	442	2,092	
BellSouth	(1.2%)	(0.3%)	(0.4%)	(5.8%)	44.4%	12.9%	19.1%	12,625	12,620	2.08	2.03	15,554	23.8%	1.2	5,365	18.9%	5,442	2,632	
CenturyTel	7.0%	7.3%	2.1%	12.1%	51.1%	15.7%	13.5%	1,000	1,166	2.20	2.18	3,650	45.1%	3.6	410	20.9%	264	3,322	
Commonwealth	2.8%	6.1%	5.7%	19.0%	49.5%	16.3%	15.5%	157	167	2.21	2.30	155	15.0%	1.0	60	18.8%	49	3,031	
Qwest	(5.5%)	(2.1%)	NM	NM	31.3%	(4.8%)	0.4%	5,304	5,057	(0.49)	0.03	22,076	73.9%	4.2	2,918	17.2%	66	1,694	
SBC Communications	0.3%	(0.2%)	0.1%	3.9%	41.1%	14.4%	13.4%	21,464	20,569	2.25	2.05	22,746	22.1%	1.1	10,020	19.2%	7,010	1,804	
Sprint FON Group	0.6%	2.8%	2.0%	(11.3%)	29.6%	8.2%	15.7%	4,515	4,555	1.34	1.36	4,277	25.4%	0.9	2,300	15.1%	2,403	2,080	
Verizon	1.2%	0.9%	0.8%	(1.9%)	38.9%	12.5%	18.2%	26,017	26,123	3.04	2.93	55,989	34.9%	2.2	10,199	15.2%	12,180	2,761	
Average/Total	1.0%	2.5%	2.8%	7.3%	38.9%	6.2%	10.3%						181,661	38.7%	2.4	42,883	18.2%	30,401	2,865
Developed Europe																			
BT Group	2.3%	2.6%	14.5%	51.2%	30.4%	5.6%	2.6%	5,748	5,733	0.09	0.13	17,834	38.0%	2.0	4,894	16.4%	773	1,550	
Deutsche Telekom	3.3%	5.5%	NM	(8.1%)	29.7%	(4.9%)	10.8%	16,019	17,030	(0.63)	0.08	67,438	58.1%	4.2	7,604	14.1%	5,836	2,228	
France Telecom	4.6%	7.4%	NM	67.6%	30.3%	(1.7%)	0.7%	14,176	15,803	(0.69)	0.51	79,850	78.0%	5.6	7,907	16.9%	337	2,974	
KPN	0.6%	2.2%	NM	(6.4%)	34.0%	(15.8%)	12.8%	4,262	4,328	(0.81)	0.16	14,805	50.0%	3.5	1,403	11.2%	1,610	2,992	
OTE	3.5%	1.6%	0.5%	58.5%	41.6%	13.5%	3.9%	1,789	1,833	1.20	1.22	2,421	30.5%	1.3	1,029	23.9%	169	1,301	
Portugal Telecom	2.8%	3.7%	3.9%	11.5%	39.6%	9.4%	13.7%	2,184	2,163	0.41	0.43	6,227	41.1%	2.8	916	16.6%	758	3,618	
Swisscom	2.3%	2.7%	7.8%	4.2%	31.9%	14.8%	18.5%	4,602	4,742	31.43	34.48	840	3.6%	0.3	833	8.5%	1,817	4,378	
TDC	3.9%	7.3%	15.8%	25.4%	27.0%	7.5%	5.6%	14,213	15,127	18.25	20.30	3,157	34.3%	1.6	927	13.1%	396	2,038	
Telecom Italia	2.1%	2.1%	8.3%	8.6%	42.9%	9.0%	12.8%	13,285	13,515	0.38	0.43	18,070	19.6%	1.4	5,034	16.2%	3,977	3,335	
Telefonica	3.1%	2.9%	28.4%	16.5%	41.2%	5.9%	12.0%	11,687	11,493	0.33	0.50	25,472	32.9%	2.2	5,424	19.1%	3,414	3,612	
Telenor	7.2%	10.6%	17.0%	NM	26.6%	8.4%	(8.5%)	13,007	15,021	2.28	3.35	4,275	48.2%	2.4	1,518	22.6%	(573)	2,763	
Telia	3.1%	8.8%	25.6%	NM	24.4%	5.9%	(3.7%)	14,241	15,502	1.14	1.67	1,768	14.3%	1.1	1,661	25.5%	(242)	1,831	
Average/Total	3.2%	4.8%	13.5%	22.9%	33.3%	4.8%	6.8%						242,158	37.4%	2.4	39,150	17.0%	18,272	2,718
Emerging Europe																			
Cesky Telecom	(1.4%)	(5.2%)	(3.0%)	2.1%	51.0%	10.4%	19.2%	26,845	25,592	16.98	15.77	327	10.4%	0.4	346	20.1%	330	736	
Malav	3.2%	3.4%	5.1%	13.5%	41.9%	17.0%	14.3%	249,398	272,389	97.67	110.76	1,564	29.8%	1.5	474	18.9%	360	1,792	
Telekomunikacja Polska S/	2.0%	4.1%	36.0%	289.6%	41.2%	2.9%	0.2%	7,403	7,884	0.37	0.92	3,530	37.6%	1.9	1,130	24.8%	11	845	
Average/Total	1.3%	0.8%	12.7%	101.7%	44.7%	10.1%	11.2%						5,422	25.9%	1.2	1,951	21.2%	701	1,124
Developed Asia																			
KT	3.9%	6.6%	27.7%	27.7%	39.0%	7.7%	9.7%	6,257	6,953	3.984	5.362	6,284	28.0%	1.2	3,254	24.6%	1,277	845	
KT ADR	3.9%	6.6%	27.7%	27.7%	39.0%	7.7%	9.7%	6,257	6,953	1.99	2.68	6,284	27.7%	1.2	3,254	24.6%	1,277	855	
PCCW	2.2%	6.7%	33.0%	18.9%	36.9%	12.0%	11.6%	7,829	8,454	0.11	0.14	4,092	55.2%	4.1	286	10.5%	315	2,000	
Singapore Telecom	7.1%	8.3%	6.8%	NM	38.2%	20.9%	(1.9%)	3,057	3,892	0.12	0.11	6,025	36.2%	2.9	1,236	22.7%	(105)	6,184	
Telstra	2.7%	4.2%	5.8%	4.1%	45.3%	17.7%	18.5%	9,483	10,040	0.28	0.31	6,566	17.2%	1.2	1,968	16.2%	2,239	3,731	
Telecom New Zealand	1.3%	10.8%	51.0%	29.3%	33.8%	4.5%	7.5%	1,403	2,300	(0.10)	0.36	2,713	36.6%	2.9	400	14.5%	207	3,580	
Average/Total	3.5%	7.3%	24.9%	20.0%	38.6%	12.6%	9.1%						25,681	34.6%	2.5	7,143	17.7%	3,933	3,270
Emerging Asia																			
MTNL	6.3%	11.8%	14.8%	94.1%	36.9%	17.1%	3.7%	23,761	21,256	20.74	14.49	(399)	-50.5%	-1.0	247	22.3%	41	174	
PLDT	7.7%	7.8%	46.1%	40.9%	55.0%	6.1%	7.4%	42,614	46,112	27.88	42.27	2,973	78.3%	3.7	329	22.7%	107	1,707	
Telkom	19.9%	20.9%	8.6%	63.2%	64.6%	40.2%	12.6%	13,554	17,800	0.84	0.69	768	17.3%	0.5	832	35.7%	293	603	
Telekom Malaysia	2.5%	2.7%	13.0%	24.8%	45.0%	12.1%	10.5%	4,432	4,571	0.39	0.44	1,475	21.4%	1.3	673	26.0%	271	1,395	
VSNL	(19.3%)	(24.7%)	(27.9%)	(42.4%)	27.3%	19.1%	18.4%	16,250	12,652	49.39	27.82	(435)	-362.4%	-1.5	62	6.0%	189	NM	
Average/Total	3.4%	3.7%	10.9%	36.1%	45.8%	18.9%	10.5%						4,382	-59.2%	0.6	2,141	22.5%	901	970
Japan																			
Japan Telecom Holdings	3.7%	6.3%	1.3%	NM	26.0%	3.0%	(5.0%)	358	466	11.76	21.16	9,918	36.3%	2.8	3,242	23.6%	(684)	NM	
KDDI	(0.7%)	1.4%	19.4%	NM	19.0%	1.6%	(0.0%)	513	545	11.16	11.60	9,991	46.5%	2.3	3,489	15.1%	(3)	NM	
NTT	2.2%	3.1%	9.3%	6.9%	27.3%	4.6%	6.8%	3,101	3,276	28.26	32.81	62,353	42.1%	2.4	16,589	17.2%	6,604	2,251	
Average/Total	1.7%	3.6%	10.0%	6.9%	24.1%	3.1%	0.6%						82,261	41.7%	2.5	23,319	18.6%	5,917	2,251
Latin America																			
CanTV	(7.4%)	(3.3%)	NM	(10.7%)	34.8%	0.3%	24.3%	766	675	0.06	0.57	298	16.7%	0.4	486	22.1%	535	343	
Brasil Telecom	7.3%	7.8%	40.5%	22.9%	46.0%	5.4%	20.8%	1,211	1,418	1.93	3.12	786	21.4%	0.6	640	24.3%	548	389	
Embratel	0.9%	16.7%	NM	NA	18.8%	0.1%	0.3%	576	648	0.01	0.02	1,332	84.2%	2.3	464	15.1%	8	NM	
Telemar	4.7%	6.5%	85.2%	35.9%	44.4%	2.2%	11.8%	2,153	2,253	0.28	0.50	4,249	56.4%	2.0	1,055	21.8%	571	512	
Telmex	2.2%	0.6%	13.3%	(15.7%)	52.5%	16.9%	40.6%	5,945	5,636	2.95	3.06	4,951	19.8%	0.8	1,200	10.6%	4,592	1,743	
Average/Total	1.5%	5.7%	46.3%	8.1%	39.3%	5.0%	19.5%						11,615	39.7%	1.2	3,844	18.8%	6,255	747
Wireline Avg/Total																			
	2.3%	4.1%	14.4%	25.0%	37.6%	7.9%	9.7%						553,182	26.2%	2.0	120,432	18.6%	66,380	2,311

Source: Bloomberg, Goldman Sachs Research estimates

Global incumbent wireline performance

	Last update			Mkt. Cap. (US\$m)	Absolute Performance				Perf. relative to local index				Perf. relative to MSCI Global Telco			
	21 November 2002	Rating/CIL	Price		1-wk	QTD	YTD	LTM	MTD	QTD	YTD	LTM	1-wk	QTD	YTD	LTM
North America																
Alaska Communications	IL		\$2.00	63	5.3%	19.0%	-74.9%	-74.5%	-0.1%	3.9%	-69.1%	-68.9%	1.1%	-10.4%	-46.9%	-45.5%
ALLTEL	U		\$53.66	16,742	9.0%	33.7%	-13.1%	-15.6%	2.4%	16.7%	6.9%	2.8%	4.8%	4.3%	14.9%	13.4%
BCE	IL		\$18.17	16,469	3.1%	2.7%	-20.3%	-23.2%	-0.7%	-10.4%	-2.0%	-6.4%	-1.1%	-26.8%	7.7%	5.8%
BellSouth	IL		\$27.45	51,489	9.8%	49.5%	-28.0%	-30.9%	-0.4%	30.5%	-11.5%	-15.8%	5.6%	20.1%	-0.1%	-1.9%
CenturyTel	OP		\$31.55	4,440	8.2%	40.7%	-3.8%	-6.4%	5.6%	22.8%	18.3%	14.0%	4.0%	11.3%	24.2%	22.6%
Commonwealth	IL		\$37.06	878	1.5%	6.6%	-18.5%	-16.5%	-4.8%	-6.9%	0.1%	1.7%	-2.7%	-22.8%	9.4%	12.5%
Qwest	U		\$4.64	7,806	25.1%	103.5%	-67.2%	-62.7%	29.8%	77.7%	-59.6%	-54.6%	20.9%	74.1%	-39.2%	-33.8%
SBC Communications	OP		\$27.48	91,921	12.6%	36.7%	-29.8%	-29.5%	1.6%	19.4%	-13.7%	-14.2%	8.4%	7.3%	-1.9%	-0.6%
Sprint FON Group	U		\$14.05	12,576	2.9%	54.1%	-30.0%	-33.9%	7.3%	34.5%	-14.0%	-19.6%	-1.3%	24.7%	-2.1%	-5.0%
Verizon	OP		\$40.64	111,719	6.1%	48.1%	-14.4%	-17.0%	2.1%	29.3%	5.3%	1.0%	1.9%	18.7%	13.6%	11.9%
Average/Total				418,368	7.6%	37.1%	-29.5%	-29.9%	3.8%	19.7%	-13.4%	-14.7%	3.4%	7.7%	-1.6%	-1.0%
Weighted Average/Total					6.7%	35.9%	-23.6%	-23.5%	1.6%	18.6%	-6.0%	-6.8%	2.5%	6.5%	4.4%	5.5%
Developed Europe																
BT Group	IL		£2.19	29,866	4.0%	32.8%	-13.6%	-22.4%	16.1%	18.0%	7.5%	-1.0%	-0.2%	3.4%	14.3%	6.6%
Deutsche Telekom	IL		€12.10	50,913	3.5%	43.7%	-37.3%	-37.3%	0.1%	20.4%	-2.1%	-2.8%	-0.7%	14.3%	-9.3%	-8.3%
France Telecom	U		€14.01	16,676	11.8%	101.9%	-68.8%	-69.2%	15.8%	70.4%	-56.1%	-57.0%	7.6%	72.5%	-40.8%	-40.3%
KPN	OP		€6.42	16,029	3.5%	22.3%	12.4%	28.7%	-3.5%	1.7%	59.9%	82.4%	-0.7%	-7.1%	40.4%	57.6%
OTE	IL		€10.60	5,216	0.2%	-7.2%	-42.1%	-47.5%	-9.0%	-5.2%	-9.3%	-14.0%	-4.0%	-36.6%	-14.1%	-18.6%
Portugal Telecom	OP		€6.72	8,452	8.7%	47.7%	-23.2%	-22.4%	2.7%	29.2%	3.0%	4.8%	4.5%	18.3%	4.8%	6.6%
Swisscom	OP		Sfr441.50	19,935	-1.0%	7.8%	-2.3%	1.4%	-3.1%	0.4%	22.1%	29.1%	-5.2%	-21.6%	25.7%	30.3%
TDC	OP		DKr198.00	5,784	0.0%	21.5%	-33.4%	-30.3%	19.1%	13.5%	-12.3%	-8.5%	-4.2%	-7.9%	-5.5%	-1.3%
Telecom Italia	IL		€8.39	55,338	2.4%	16.4%	-12.7%	-12.7%	-2.3%	-1.4%	10.6%	11.5%	-1.8%	-13.0%	15.3%	16.3%
Telefonica	OP		€10.01	47,563	1.1%	8.8%	-8.8%	-4.0%	-3.9%	-7.8%	15.5%	22.6%	-3.1%	-20.6%	19.2%	25.0%
Telenor	IL		Nkr27.50	6,786	2.7%	32.8%	-30.7%	-32.1%	-1.3%	11.0%	-10.5%	-11.1%	-1.5%	3.4%	-2.7%	-3.1%
Telia	NR		SKr35.20	11,814	1.5%	21.7%	-28.8%	-22.3%	2.1%	13.0%	0.6%	3.6%	-2.7%	-7.7%	-0.8%	6.6%
Average/Total				274,373	3.2%	29.2%	-24.1%	-22.5%	2.7%	13.8%	2.4%	5.0%	-1.0%	-0.2%	3.9%	6.4%
Weighted Average/Total					3.0%	28.1%	-20.3%	-19.0%	1.5%	10.4%	6.4%	8.7%	-1.2%	-1.3%	7.6%	9.9%
Emerging Europe																
Cesky Telecom	U		Kc267.67	2,820	15.5%	11.5%	-26.2%	-17.6%	16.7%	8.6%	-35.9%	-26.1%	11.3%	-17.9%	1.8%	11.3%
Malav	IL		HUF838	3,676	1.0%	11.6%	-7.4%	-12.7%	3.4%	1.2%	-15.7%	-20.4%	-3.2%	-17.6%	20.6%	16.3%
Telekomunikacja Polska SA	U		Plz13.70	4,864	4.2%	17.6%	-2.1%	-14.6%	0.3%	4.9%	0.9%	-6.7%	0.0%	-11.8%	25.8%	14.3%
Average/Total				11,360	6.9%	13.6%	-11.9%	-15.0%	6.8%	4.9%	-16.9%	-17.8%	2.7%	-15.8%	16.1%	14.0%
Weighted Average/Total					5.9%	14.1%	-9.8%	-14.8%	5.4%	4.6%	-13.6%	-16.0%	1.7%	-15.3%	18.2%	14.2%
Developed Asia																
KT	OP/CIL		Won53,400	13,603	8.2%	-2.6%	6.9%	1.9%	1.3%	-8.8%	7.4%	-7.8%	4.0%	-32.0%	34.9%	30.9%
KT ADR	OP/CIL		\$22.45	13,878	6.0%	1.2%	10.4%	1.8%	3.7%	-11.6%	35.8%	24.0%	1.8%	-28.2%	38.4%	30.8%
PCCW	IL		HK\$1.33	3,934	2.3%	19.8%	-38.1%	-42.8%	14.1%	8.7%	-29.5%	-35.6%	-1.9%	-9.6%	-10.2%	-13.8%
Singapore Telecom	IL		S\$1.35	13,599	1.5%	-2.2%	-23.3%	-21.1%	-1.9%	-5.4%	-11.0%	-18.1%	-2.7%	-31.6%	4.7%	7.9%
Telstra	OP		A\$4.51	32,664	-1.3%	-4.9%	-17.1%	-13.4%	-5.4%	-7.3%	-6.4%	-5.4%	-5.5%	-34.3%	10.9%	15.5%
Telecom New Zealand	IL		NZ\$4.69	4,433	-1.7%	-4.7%	-6.2%	-4.7%	-4.2%	-2.9%	-1.5%	-1.5%	-5.9%	-34.1%	21.8%	24.3%
Average/Total				68,232	1.8%	1.1%	-15.6%	-16.0%	0.8%	-3.1%	-8.2%	-13.7%	-2.4%	-28.3%	12.4%	13.0%
Weighted Average/Total					1.3%	-2.2%	-11.9%	-12.6%	-1.4%	-8.4%	1.7%	-5.0%	-2.5%	-37.6%	21.7%	22.2%
Emerging Asia																
MTNL	OP		Rs100.95	1,189	5.5%	-8.1%	-20.3%	-29.8%	1.1%	-11.4%	-16.2%	-26.2%	1.3%	-37.5%	7.7%	-0.8%
PLDT	IL		Ps255.00	804	1.0%	-8.9%	-38.9%	-34.6%	12.8%	-0.2%	-30.8%	-32.3%	-3.2%	-38.3%	-11.0%	-5.7%
Telkom	OP		Rp3,275	3,660	-1.5%	-12.1%	2.3%	19.1%	5.3%	-1.2%	7.5%	21.5%	-5.7%	-41.5%	30.3%	48.1%
Telekom Malaysia	NR		Rm7.20	5,869	0.0%	1.4%	-30.1%	-21.7%	-3.4%	1.4%	-23.8%	-22.4%	-4.2%	-28.0%	-2.1%	7.2%
VSNL	IL		Rs93.85	555	3.4%	-16.7%	-30.9%	-37.9%	-1.5%	-19.7%	-27.3%	-34.7%	-0.8%	-46.1%	-2.9%	-8.9%
Average/Total				12,077	1.7%	-8.9%	-23.6%	-21.0%	2.9%	-6.2%	-18.1%	-18.8%	-2.5%	-38.3%	4.4%	8.0%
Weighted Average/Total					0.3%	-5.1%	-19.9%	-11.8%	0.9%	-1.7%	-14.2%	-10.7%	-3.9%	-34.5%	8.0%	17.2%
Japan																
Japan Telecom Holdings	U		Y378	9,844	11.8%	24.8%	-3.8%	-4.1%	19.4%	35.5%	17.1%	20.2%	7.6%	-4.7%	24.1%	24.9%
KDDI	IL		Y358,000	11,474	3.8%	-5.8%	46.1%	9.5%	1.1%	2.3%	77.9%	37.2%	-0.4%	-35.2%	74.1%	38.4%
NTT	OP/CIL		Y450,000	59,176	-0.9%	11.1%	5.4%	-8.0%	1.9%	20.7%	28.3%	15.3%	-5.1%	-18.3%	33.3%	21.0%
Average/Total				80,494	4.9%	10.0%	15.9%	-0.9%	7.5%	19.6%	41.1%	24.2%	0.7%	-19.4%	43.9%	28.1%
Weighted Average/Total					1.3%	10.4%	10.1%	-5.0%	3.9%	19.9%	34.0%	19.0%	-2.9%	-19.0%	38.0%	24.0%
Latin America																
CanTV	OP		\$13.18	1,780	8.6%	24.9%	-6.2%	-35.9%	5.5%	9.1%	15.3%	-21.9%	4.4%	-4.5%	21.8%	-6.9%
Brasil Telecom	OP		\$26.10	1,905	10.2%	17.5%	-37.1%	-24.8%	-11.3%	2.6%	-22.6%	-8.5%	6.0%	-11.9%	-9.1%	4.1%
Embratel	IL		\$0.75	250	25.0%	25.0%	-82.0%	-80.3%	18.6%	9.1%	-77.8%	-76.0%	20.8%	-4.4%	-54.0%	-51.3%
Telemar	IL		\$7.53	2,848	11.6%	42.1%	-51.8%	-41.4%	3.2%	24.0%	-40.8%	-28.6%	7.3%	12.7%	-23.9%	-12.4%
Telmex	OP/CIL		\$31.00	20,057	3.0%	10.1%	-11.5%	-7.3%	-3.6%	-3.8%	8.6%	12.9%	-1.2%	-19.3%	16.5%	21.7%
Average/Total				26,839	11.7%	23.9%	-37.7%	-37.9%	2.5%	8.2%	-23.4%	-24.4%	7.5%	-5.5%	-9.7%	-9.0%
Weighted Average/Total					4.4%	13.5%	-17.5%	-12.3%	-3.0%	-0.1%	-0.1%	5.3%	0.5%	-13.9%	8.6%	14.7%
Incumbent Wireline Average/Total																
				905,621	5.3%	20.7%	-22.4%	-23.2%	3.4%	10.2%	-6.7%	-8.3%	1.1%	-8.7%	5.5%	5.7%
					4.4%	26.4%	-18.0%	-18.7%	1.4%	12.9%	1.9%	0.6%	0.3%	-3.0%	9.9%	10.2%

Source: Bloomberg, Goldman Sachs Research estimates

Global wireless valuations

		Last update 21 November 2002	Rating/CIL	Price	Mkt. Cap. (US\$m)	Ent. Val. (US\$m)	3-yr EBITDA				3-yr EPS				3-yr FCF				Div. Yld.(%)		
							EV/EBITDA (X)	CAGR (%)	2002E	2003E	2004E	2002E	2003E	2004E	2002E	2003E	2004E	2002E		2003E	2004E
Developed Europe																					
Cosmote	IL			€9.94	3,288	3,680	6.8	6.1	5.7	5.0%	1.4	13.6	12.7	12.3	4.0%	3.4	3.7%	5.2%	7.1%	34.0%	2.2%
Europolitan	OP			SKr48.90	2,234	2,444	8.1	7.6	7.1	5.4%	1.5	13.8	14.0	14.6	0.8%	16.8	2.9%	3.6%	5.6%	34.6%	1.8%
Libertel	OP			€9.44	2,957	3,644	6.6	5.8	5.2	5.0%	1.3	11.8	10.8	10.4	6.5%	1.8	9.0%	7.8%	7.7%	-2.6%	0.0%
mmO2	IL			€0.55	7,535	8,540	7.4	5.3	4.5	23.8%	0.3	NM	NM	NM	20.0%	NM	NA	NA	NA	NM	0.0%
Mobistar	OP			€23.87	1,492	2,296	7.7	6.6	5.9	6.9%	1.1	12.1	11.1	10.9	7.2%	1.7	3.9%	5.0%	6.5%	25.1%	0.0%
Orange SA	U			€7.00	33,972	41,733	8.8	7.5	6.9	10.8%	0.8	43.3	40.4	40.7	6.8%	6.4	NA	NA	2.1%	NM	0.0%
Panafon	IL			€5.66	3,082	3,500	7.4	6.6	6.0	5.4%	1.4	13.4	12.4	11.8	5.8%	2.3	3.3%	5.6%	6.1%	23.7%	2.1%
Sonera	NR			€5.76	6,439	6,782	8.5	6.6	5.6	13.5%	0.6	21.9	14.7	11.1	32.1%	0.7	10.9%	9.2%	12.4%	9.2%	0.0%
Stet Hellas	IL			€6.19	515	834	4.1	4.0	3.8	2.5%	1.6	10.2	11.3	12.2	(9.8%)	-1.0	4.3%	0.6%	6.4%	31.5%	3.4%
Telecel	IL			€8.25	1,782	2,045	6.5	5.8	5.2	7.4%	0.9	16.3	16.0	15.0	6.9%	2.3	1.7%	3.1%	5.6%	54.8%	0.9%
Tele2	U			SKr237.00	3,894	5,260	10.8	9.2	8.0	15.5%	0.7	NM	60.6	32.4	NM	NM	NA	NA	NA	NM	0.0%
Telefonica Moviles	IL			€7.19	31,209	37,722	10.2	9.2	8.5	7.5%	1.4	NM	19.8	17.8	NM	NM	5.1%	5.4%	5.1%	3.8%	0.0%
Telecom Italia Mobile	OP			€5.32	45,542	47,384	9.8	9.7	9.5	2.8%	3.5	29.8	28.0	26.9	6.0%	5.0	2.0%	2.8%	3.4%	27.6%	4.4%
Vodafone	OP			£1.26	136,016	156,912	8.6	7.5	6.7	9.4%	0.9	21.2	19.0	17.4	10.3%	2.1	4.4%	4.1%	5.1%	14.4%	1.3%
Average/Total					279,956	322,779	7.9	7.0	6.3	8.6%	1.2	18.8	20.8	18.0	8.0%	3.8	4.7%	4.8%	6.1%	23.3%	1.2%
Weighted Average							8.9	7.9	7.3	8.6%	1.4	25.5	23.4	21.7	9.5%	3.4	4.2%	4.2%	4.7%	16.2%	1.4%
Emerging Europe																					
MobiNil	IL			EGP29.50	637	999	3.4	2.6	2.5	11.4%	0.3	5.5	4.3	5.1	6.1%	0.9	22.8%	26.2%	NA	11.6%	5.1%
Mobile Telesystems	MO			\$38.00	3,787	3,851	6.2	4.3	3.8	26.3%	0.2	14.0	10.3	7.4	27.7%	0.5	NA	NA	2.1%	NM	0.0%
Turkcell	IL			\$17.87	3,574	4,379	6.1	4.8	3.8	10.0%	0.6	29.3	12.6	9.2	31.5%	0.9	6.0%	17.4%	15.3%	0.1%	0.0%
Vimpelcom	OP			\$34.55	1,615	2,124	7.5	6.9	6.4	12.1%	0.6	15.7	20.0	23.8	(13.2%)	-1.2	NA	NA	NA	NM	0.0%
Average/Total					9,614	11,353	5.8	4.7	4.1	15.0%	0.4	16.1	11.8	11.3	13.0%	0.3	14.4%	21.8%	8.7%	5.8%	1.3%
Weighted Average							6.2	4.8	4.1	16.9%	0.4	19.4	12.4	10.6	20.6%	0.4	8.6%	18.7%	8.5%	1.8%	0.3%
Developed Asia																					
Far Eastone	IL			NT\$27.30	1,809	2,269	5.7	5.4	5.0	4.9%	1.2	7.6	7.8	7.8	(7.6%)	-1.0	NA	4.4%	7.9%	NM	3.7%
Hutchison Australia	U			A\$0.22	84	843	NM	NM	NM	NM	NM	NM	NM	NM	28.1%	NM	NA	NA	NA	NM	0.0%
LG Telecom	U			Won4,810	1,087	2,055	4.8	4.1	3.9	11.4%	0.4	14.0	13.5	14.3	3.8%	3.7	NA	0.0%	1.9%	NM	1.8%
KT Freetel	OP			Won30,800	4,672	7,339	5.6	5.1	4.5	7.5%	0.8	10.0	11.0	10.6	2.0%	5.0	2.0%	7.0%	12.0%	90.9%	3.0%
SK Telecom	OP			Won243,500	17,890	19,015	5.4	4.7	4.1	4.1%	1.3	12.2	11.4	10.4	8.2%	1.5	8.7%	9.7%	10.3%	9.4%	0.4%
Smartone	OP			HK\$8.60	649	183	2.0	1.3	1.0	17.1%	0.1	15.6	10.6	9.5	18.6%	0.8	5.2%	7.9%	8.3%	13.1%	1.9%
Taiwan Cellular	IL			NT\$28.00	3,623	4,622	6.2	5.5	5.0	4.7%	1.3	6.7	7.1	7.1	(8.0%)	-0.8	0.9%	6.7%	7.5%	103.1%	0.0%
Average/Total					29,813	36,327	4.9	4.4	3.9	8.3%	0.8	11.0	10.2	9.9	6.4%	1.5	4.2%	6.0%	8.0%	54.1%	1.5%
Weighted Average							5.4	4.8	4.2	5.3%	1.2	11.1	10.7	10.0	4.4%	1.7	6.4%	8.2%	9.7%	36.3%	1.0%
Emerging Asia																					
AIS	IL			Bt37.00	2,501	3,203	4.4	3.8	3.2	6.5%	0.7	9.8	8.9	7.8	10.3%	0.9	NA	10.6%	13.9%	NM	2.6%
Bharti Tele-Ventures	IL			Rs22.25	856	1,530	12.1	7.6	5.6	53.8%	0.2	NM	NM	NM	NM	NM	NA	NA	NA	NM	0.0%
Celcom	NR			Rm2.40	1,253	1,587	5.2	4.8	3.9	5.1%	1.0	12.9	26.7	17.7	4.8%	2.7	9.2%	9.9%	11.4%	12.1%	0.0%
China Mobile (HK)	U			HK\$20.60	51,950	56,412	6.3	4.9	4.3	11.3%	0.6	12.6	10.6	10.1	11.8%	1.1	NA	5.0%	7.4%	NM	0.0%
China Unicom	U			HK\$5.60	9,013	10,254	5.0	4.2	3.6	16.4%	0.3	16.9	14.5	12.5	14.9%	1.1	NA	NA	2.8%	NM	0.0%
Indosat	IL			Rp6,000	918	1,418	3.7	3.0	2.3	18.7%	0.2	18.5	13.2	10.7	36.6%	0.5	NA	NA	14.4%	NM	2.2%
Maxis	IL			Rm5.80	3,741	3,659	7.4	6.5	5.5	9.5%	0.8	13.5	13.8	12.4	6.2%	2.2	4.7%	10.7%	13.8%	50.3%	1.5%
TAC	IL			\$0.57	270	1,502	6.5	6.5	6.0	9.5%	0.7	4.9	4.4	4.2	8.2%	0.6	NA	NA	NA	NM	0.0%
Average/Total					70,503	79,565	6.3	5.2	4.3	16.4%	0.6	12.7	13.2	10.8	13.3%	1.3	6.9%	9.0%	10.6%	31.2%	0.8%
Weighted Average							6.1	4.9	4.2	12.2%	0.5	13.2	11.5	10.6	12.0%	1.2	5.8%	5.7%	7.5%	40.7%	0.2%
Japan																					
NTT DoCoMo	IL			Y224,000	91,616	101,958	7.1	6.6	5.9	5.3%	1.3	23.8	19.2	16.2	18.7%	1.3	2.2%	2.4%	5.9%	44.4%	0.2%
Latin America																					
America Movil	OP			\$14.13	9,185	12,912	6.1	5.0	4.3	13.6%	0.5	27.8	15.5	10.1	55.0%	0.5	7.7%	8.6%	11.9%	22.1%	0.0%
Tele Celular Sul	IL			\$7.75	265	249	2.8	3.7	3.8	-10.4%	-0.3	12.5	13.8	12.6	8.1%	1.5	22.6%	13.1%	13.5%	-5.1%	2.0%
Tele Centro-Oeste Celular	IL			\$3.52	441	580	2.9	3.1	2.9	-2.7%	-1.1	4.2	4.3	3.9	8.9%	0.5	37.0%	21.6%	25.6%	-4.3%	5.9%
Tele Leste Celular	U			\$5.75	55	177	3.4	2.8	2.3	3.8%	0.9	NM	11.9	2.9	NM	NM	NA	18.9%	30.7%	NM	0.0%
Tele Nordeste Celular	IL			\$15.35	264	265	2.6	3.1	3.1	-8.1%	-0.3	7.6	6.7	6.4	12.1%	0.6	35.0%	19.3%	15.3%	-18.9%	3.3%
Tele Norte Celular	U			\$4.13	28	114	2.4	1.9	1.6	7.8%	0.3	3.9	2.7	2.1	41.2%	0.1	52.4%	79.5%	97.4%	-17.6%	6.4%
Telemig Celular	OP			\$16.81	281	362	3.4	3.9	3.6	-4.7%	-0.7	17.4	14.1	7.0	45.5%	0.4	29.0%	15.4%	17.2%	-10.0%	1.4%
Telep Celular	IL			\$2.85	1,336	2,003	4.1	4.5	4.1	-3.6%	-1.1	NM	22.6	11.3	NM	NM	25.5%	22.4%	21.5%	-5.9%	0.0%
Average/Total					11,854	16,662	3.5	3.5	3.2	-0.6%	-0.2	12.2	11.4	7.0	28.5%	0.6	29.9%	24.8%	29.1%	(5.7%)	2.4%
Weighted Average							5.5	4.8	4.2	9.5%	0.2	25.6	15.5	9.8	50.5%	0.5	12.4%	11.4%	14.0%	15.6%	0.5%
Wireless Average/Total																					
Wireless Weighted Average/Total																					

Source: Bloomberg, Goldman Sachs Research estimates

Multiples in this valuation table may NOT be directly comparable to figures in our research due to definition differences. In this table,

1. We define enterprise value as market capitalization + net debt + minorities – associates
2. EPS figures have been adjusted to exclude goodwill amortization and exceptionals
3. FCF is defined as EBITDA less capex, change in working capital, interest paid and tax paid

Global wireless operating statistics

	3-yr CAGR (%) 2002E-2005E				Group Margins (%) 2002E				EBITDA estimates			Adj. EPS		Net debt	Net debt	Net debt	Capex	Capex/	FCF	Subs
	Sales	EBITDA	EPS	FCF	EBITDA	Net	FCF	FY2002E	FY2003E	FY2002E	FY2003E	2002E	2002E	(US\$m)	/EV (%)	EBITDA	(US\$m)	sales (%)	(US\$m)	('000)
																(X)2002E	2002E	2002E	2002E	2002E
Developed Europe																				
Cosmote	6.6%	5.0%	4.0%	34.0%	43.3%	19.3%	9.7%	542	587	0.73	0.78	329	8.9%	0.6	291	23.1%	122	3,497		
Europoitan	7.4%	5.4%	0.8%	34.6%	43.6%	23.4%	10.4%	2,510	2,741	3.31	3.62	11	0.4%	0.0	179	25.9%	72	1,292		
Libertel	7.1%	5.0%	6.5%	(2.6%)	37.7%	16.2%	18.2%	453	583	0.49	0.90	687	18.9%	1.2	157	10.7%	266	3,287		
mm02	8.7%	23.8%	20.0%	NM	15.7%	(3.8%)	(5.8%)	433	829	(0.04)	(0.01)	1,101	12.9%	1.0	1,652	22.5%	(428)	18,770		
Mobistar	7.9%	6.9%	7.2%	25.1%	29.9%	12.3%	5.9%	299	336	1.98	2.16	805	35.0%	2.7	182	18.2%	59	2,673		
Orange SA	7.4%	10.8%	6.8%	NM	27.5%	4.5%	(1.0%)	4,743	5,587	0.16	0.17	7,291	17.5%	1.5	3,431	19.8%	(165)	19,293		
Panafon	7.5%	5.4%	5.8%	23.7%	40.4%	19.5%	8.7%	428	491	0.38	0.44	418	11.9%	0.9	185	15.7%	103	3,152		
Sonera	10.0%	13.5%	32.1%	9.2%	35.2%	12.9%	23.1%	798	984	0.26	0.39	1,984	29.2%	2.5	284	12.5%	525	2,542		
Stet Hellas	3.1%	2.5%	(9.8%)	31.5%	34.4%	8.5%	3.7%	205	212	0.61	0.55	319	38.3%	1.6	125	21.0%	22	2,329		
Telecel	6.8%	7.4%	6.9%	54.8%	29.6%	10.3%	2.8%	286	325	0.49	0.51	263	12.9%	0.8	200	18.8%	30	2,971		
Tele2	10.7%	15.5%	627.2%	NM	14.1%	0.0%	(6.3%)	4,373	5,003	0.03	0.31	1,297	24.7%	2.7	395	11.4%	(218)	2,803		
Telefonica Moviles	6.6%	7.5%	NM	3.8%	40.9%	(38.7%)	17.7%	3,706	4,012	(0.81)	0.36	6,109	16.2%	1.6	1,012	11.1%	1,606	18,490		
Telecom Italia Mobile	4.8%	2.8%	6.0%	27.6%	45.5%	14.4%	8.7%	4,832	4,936	0.18	0.19	1,137	2.4%	0.2	1,883	17.7%	929	24,922		
Vodafone	8.3%	9.4%	10.3%	14.4%	35.6%	12.5%	6.2%	9,993	12,015	0.05	0.06	23,405	14.9%	1.3	9,711	19.0%	5,247	108,860		
Average/Total	7.3%	8.6%	55.7%	23.3%	33.8%	8.0%	7.3%					45,155	17.4%	1.3	19,688	17.7%	8,170	214,881		
Emerging Europe																				
MobiNil	13.2%	11.4%	6.1%	11.6%	51.3%	20.1%	25.0%	1,375	1,524	5.38	6.82	362	36.2%	1.2	116	20.0%	145	2,281		
Mobile Telesystems	29.1%	26.3%	27.7%	NM	48.6%	21.5%	(12.4%)	625	1,002	2.72	3.70	181	4.7%	0.3	653	50.7%	(160)	6,340		
Turkcell	11.8%	10.0%	31.5%	0.1%	35.8%	6.1%	9.7%	716	801	0.61	1.42	1,173	26.8%	1.6	85	4.2%	194	15,610		
Vimpelcom	16.1%	12.1%	(13.2%)	(70.5%)	40.2%	14.7%	(35.9%)	284	321	2.19	1.73	329	15.5%	1.2	503	71.2%	(254)	4,529		
Average/Total	17.5%	15.0%	13.0%	(19.6%)	43.9%	15.6%	(3.4%)					2,044	20.8%	1.1	1,356	36.6%	(75)	28,761		
Developed Asia																				
Far EastOne	4.8%	4.9%	(7.6%)	NM	40.6%	22.0%	(20.0%)	13,858	14,713	3.57	3.50	460	20.3%	1.2	284	29.0%	(196)	4,047		
Hutchison Australia	32.1%	NM	28.1%	(30.6%)	(25.0%)	(58.5%)	(418.6%)	(58)	(31)	(0.20)	(0.41)	759	90.0%	NM	498	378.9%	(550)	282		
LG Telecom	5.6%	11.4%	3.8%	NM	30.0%	5.4%	(13.6%)	520	603	343	355	969	47.1%	2.3	422	29.6%	(194)	4,825		
KT Freetel	4.7%	7.5%	2.0%	90.9%	37.5%	13.4%	2.7%	1,582	1,716	3,082	2,797	2,667	36.3%	2.0	1,029	29.6%	93	9,074		
SK Telecom	4.5%	4.1%	8.2%	9.4%	50.0%	20.6%	20.5%	4,309	4,531	19,948	21,353	2,318	12.2%	0.7	1,498	21.1%	1,453	17,205		
SmarTone	12.2%	17.1%	18.6%	13.1%	27.7%	12.7%	10.3%	568	858	0.38	0.72	(466)	-254.1%	-5.1	49	14.9%	34	1,012		
Taiwan Cellular	3.6%	4.7%	(8.0%)	103.1%	44.4%	29.4%	1.8%	26,084	27,502	4.17	3.95	999	21.6%	1.3	333	19.7%	31	6,793		
Average/Total	9.6%	8.3%	6.4%	37.2%	29.3%	6.4%	(59.6%)					7,707	-3.8%	0.4	4,113	74.7%	671	43,178		
Emerging Asia																				
AIS	7.1%	6.5%	10.3%	NM	40.2%	14.3%	(22.0%)	31,326	34,404	3.79	4.14	702	21.9%	1.0	820	45.7%	(395)	10,747		
Bharti Tele-Ventures	41.4%	53.8%	NM	(60.2%)	22.9%	(11.7%)	(93.1%)	3,248	7,044	(0.90)	(1.99)	675	44.1%	5.3	465	84.3%	(513)	2,720		
Celcom	7.4%	5.1%	4.8%	12.1%	44.5%	9.7%	16.6%	1,164	1,134	0.19	0.09	334	21.0%	1.1	95	13.8%	115	2,200		
China Mobile (HK)	14.6%	11.3%	11.8%	NM	57.8%	25.7%	(29.5%)	74,609	90,211	1.73	2.06	4,462	7.9%	0.5	6,183	39.6%	(4,607)	118,309		
China Unicom	20.3%	16.4%	14.9%	NM	43.4%	11.2%	(25.3%)	17,006	21,485	0.35	0.41	1,241	12.1%	0.6	2,559	54.1%	(1,199)	41,733		
Indosat	17.5%	18.7%	36.6%	NM	50.6%	6.6%	(44.7%)	3,430,854	4,143,895	432	606	499	35.2%	1.3	413	54.9%	(336)	3,139		
Maxis	9.6%	9.5%	6.2%	50.3%	49.6%	25.4%	17.7%	1,877	2,056	0.43	0.42	(82)	-2.2%	-0.2	279	28.1%	176	3,130		
TAC	9.6%	9.5%	8.2%	NM	26.0%	6.2%	(34.4%)	9,995	10,930	5.01	5.57	1,231	82.0%	5.3	431	48.7%	(305)	5,546		
Average/Total	15.9%	16.4%	13.3%	0.7%	41.9%	10.9%	(26.8%)					9,062	27.8%	1.9	11,246	46.1%	(7,063)	187,524		
Japan																				
NTT DoCoMo	2.7%	5.3%	18.7%	44.4%	37.4%	10.1%	5.3%	1,641	1,789	8.01	9.88	10,343	10.1%	0.7	6,198	16.2%	2,022	32,820		
Latin America																				
America Movil	12.6%	13.6%	55.0%	22.1%	36.0%	5.6%	12.1%	2,107	2,493	0.51	0.91	3,728	28.9%	1.8	1,200	20.5%	710	31,961		
Tele Celular Sut	(12.8%)	(10.4%)	8.1%	(5.1%)	41.3%	7.4%	20.9%	118	86	0.62	0.56	(21)	-6.3%	-0.2	12	4.2%	60	1,700		
Tele Centro-Oeste Cel.	(3.0%)	(2.7%)	8.9%	(4.3%)	42.1%	20.5%	31.9%	216	184	0.84	0.82	153	24.0%	0.7	54	10.6%	163	3,073		
Tele Leste Celular	1.3%	3.8%	NM	NM	31.6%	(0.1%)	(14.9%)	52	58	(0.01)	0.49	122	68.8%	2.3	57	34.8%	(25)	903		
Tele Nordeste Celular	(8.8%)	(8.1%)	12.1%	(18.9%)	43.9%	11.4%	30.6%	132	105	2.01	2.29	2	0.5%	0.0	17	5.5%	92	1,980		
Tele Norte Celular	6.5%	7.8%	41.2%	(17.6%)	30.8%	3.5%	7.2%	62	71	1.06	1.54	114	75.9%	1.8	29	14.2%	14	1,074		
Telemig Celular	(3.7%)	(4.7%)	45.5%	(10.0%)	41.1%	5.2%	26.1%	128	103	0.97	1.19	97	22.3%	0.8	33	10.6%	82	1,912		
Teleesp Celular	(4.9%)	(3.6%)	NM	(5.9%)	38.1%	(19.3%)	26.8%	485	410	(0.75)	0.13	667	33.3%	1.4	144	11.3%	341	7,157		
Average/Total	(1.6%)	(0.6%)	28.5%	(5.7%)	38.1%	4.3%	17.6%					4,860	30.9%	1.1	1,546	14.0%	1,438	49,759		
Wireless Average/Total	8.5%	8.8%	29.0%	13.0%	36.5%	8.3%	(9.5%)					79,171	18.6%	1.2	44,148	33.7%	5,163	556,922		

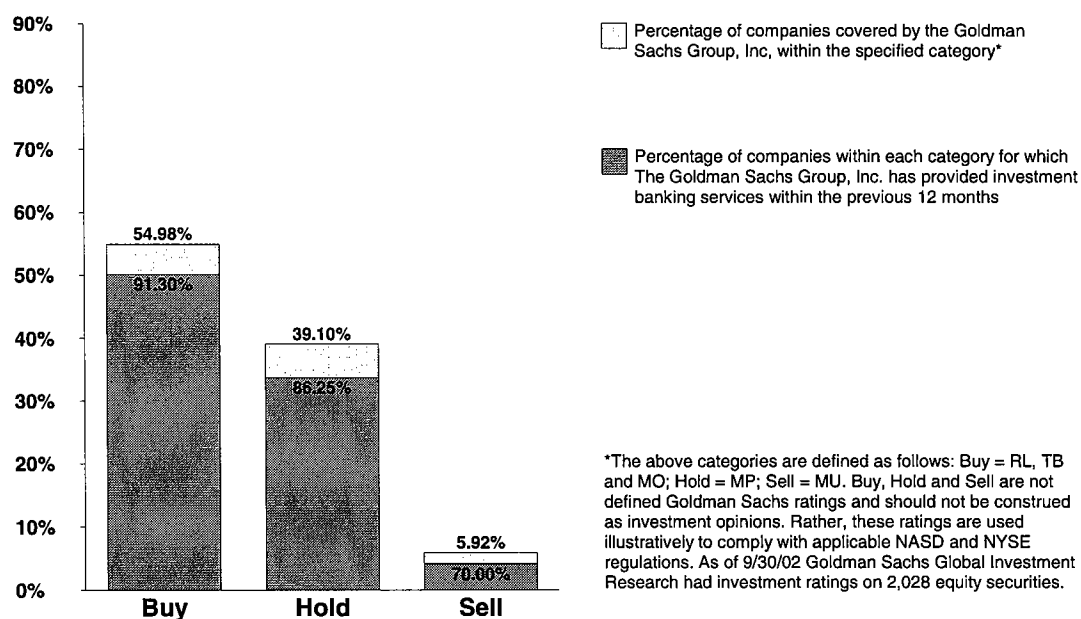
Source: Bloomberg, Goldman Sachs Research estimates

Global wireless performance

	Last update		Price	Mkt. Cap. (US\$m)	Absolute Performance				Perf. relative to local Index				Perf. relative to MSCI Global Telco			
	21 November 2002	Rating/CIL			1-wk	QTD	YTD	LTM	MTD	QTD	YTD	LTM	1-wk	QTD	YTD	LTM
Developed Europe																
Cosmote	IL	€9.94	3,288	4.4%	18.3%	-13.0%	-15.5%	14.8%	20.9%	36.4%	38.5%	0.2%	-11.1%	15.0%	13.5%	
Europoitan	OP	SKr 48.90	2,234	6.3%	11.1%	-30.1%	-27.0%	4.1%	-12.8%	4.1%	8.1%	2.1%	-18.3%	-2.2%	1.9%	
Libertel	OP	€9.44	2,957	3.2%	16.5%	-8.6%	-8.4%	18.7%	-3.1%	30.0%	29.8%	-1.0%	-12.9%	19.3%	20.5%	
nmO2	IL	€0.55	7,535	1.4%	37.5%	-36.4%	-35.7%	10.5%	22.1%	-20.8%	-17.9%	-2.8%	8.1%	-8.5%	-6.7%	
Mobistar	OP	€23.87	1,492	6.8%	53.0%	30.1%	45.1%	13.3%	35.3%	71.2%	84.2%	2.6%	23.6%	58.0%	74.1%	
Orange SA	U	€7.00	33,972	7.9%	52.8%	-31.2%	-28.3%	18.2%	29.0%	-3.3%	0.3%	3.7%	23.4%	-3.3%	0.7%	
Panafon	IL	€5.66	3,082	11.0%	24.7%	-2.4%	-6.0%	17.9%	27.4%	52.9%	54.1%	6.8%	-4.7%	25.5%	23.0%	
Sonera	NR	€5.76	6,439	7.3%	53.6%	1.2%	3.8%	17.0%	36.1%	18.0%	20.6%	3.1%	24.2%	29.2%	32.7%	
Stet Hellas	IL	€6.19	515	3.2%	6.4%	0.7%	-6.2%	8.9%	-7.1%	23.8%	14.2%	-1.0%	-23.0%	28.6%	22.8%	
Tele2	U	SKr 237.00	3,894	8.0%	71.7%	-37.3%	-28.2%	1.6%	34.7%	-6.6%	6.4%	3.8%	42.3%	-9.3%	0.8%	
Telecel	IL	€8.25	1,782	2.1%	16.2%	-8.3%	-4.6%	10.5%	1.6%	22.9%	28.8%	-2.1%	-13.2%	19.6%	24.3%	
Telefonica Moviles	IL	€7.19	31,209	-0.8%	22.5%	-11.9%	-17.4%	-5.7%	2.4%	13.9%	8.2%	-4.8%	-6.9%	16.1%	11.6%	
Telecom Italia Mobile	OP	€5.32	45,542	5.0%	35.1%	-15.2%	-17.3%	6.0%	14.4%	7.5%	5.5%	0.7%	5.7%	12.8%	11.7%	
Vodafone	OP	£1.26	136,016	8.2%	54.3%	-30.0%	-30.5%	18.0%	37.1%	-12.9%	-11.4%	4.0%	24.9%	-2.1%	-1.6%	
Average/Total			279,956	5.3%	33.8%	-13.8%	-12.6%	11.0%	17.0%	16.9%	19.2%	1.1%	4.4%	14.2%	16.4%	
Weighted Average/Total				6.3%	45.4%	-24.0%	-24.6%	12.7%	26.6%	-2.2%	-1.5%	2.1%	16.0%	3.9%	4.3%	
Emerging Europe																
MobiNii	IL	EGP29.50	637	3.1%	2.4%	-11.6%	-5.8%	NA	NA	NA	NA	-1.1%	-27.0%	16.4%	23.2%	
Mobile Telesystems	MO	\$38.00	3,787	6.8%	25.8%	6.6%	10.1%	10.2%	9.9%	31.0%	34.0%	2.6%	-3.6%	34.5%	39.0%	
Turkcell	IL	\$17.87	3,574	5.1%	52.1%	-13.0%	13.0%	10.5%	32.8%	7.0%	37.5%	0.9%	22.7%	15.0%	41.9%	
Vimpelcom	OP	\$34.55	1,615	15.8%	45.8%	32.6%	40.2%	16.2%	27.3%	63.1%	70.7%	11.6%	16.4%	60.6%	69.1%	
Average/Total			9,614	7.7%	31.5%	3.7%	14.4%	12.3%	23.3%	33.7%	47.4%	3.5%	2.1%	31.6%	43.3%	
Weighted Average/Total				7.4%	37.4%	2.5%	15.2%	10.6%	20.7%	25.4%	39.2%	3.2%	8.0%	30.4%	44.1%	
Developed Asia																
Hutchison Australia	U	A\$0.22	84	0.0%	0.0%	-67.2%	-24.1%	-8.5%	-2.4%	-56.4%	-16.1%	-4.2%	-29.4%	-39.2%	4.8%	
Far EastOne	IL	NT\$27.30	1,809	-2.8%	-2.8%	-31.5%	NA	-2.2%	-12.1%	-14.0%	NA	-7.1%	-32.3%	-3.5%	NA	
LG Telecom	U	Won4,810	1,087	2.8%	1.1%	-41.6%	-14.9%	-6.5%	-1.9%	-8.2%	16.1%	-1.4%	-28.4%	-13.7%	14.1%	
KT Freitel	OP	Won30,800	4,672	5.7%	1.7%	-28.0%	-27.3%	1.6%	-1.3%	5.4%	3.7%	1.5%	-27.8%	-0.1%	1.7%	
SK Telecom	OP	Won243,500	17,890	6.3%	2.7%	-9.1%	-9.8%	3.3%	-3.8%	-8.7%	-18.4%	2.1%	-26.7%	18.8%	19.1%	
SmartOne	OP	HK\$8.60	649	1.2%	10.3%	-7.5%	-1.1%	-2.8%	0.0%	5.4%	11.2%	-3.0%	-19.1%	20.4%	27.8%	
Taiwan Cellular	IL	NT\$28.00	3,623	-3.4%	-13.0%	-28.8%	-13.0%	-9.9%	9.5%	-77.8%	-79.1%	-7.7%	-42.4%	-0.8%	16.0%	
Average/Total			29,813	1.4%	0.0%	-30.5%	-15.0%	-3.6%	-1.7%	-22.1%	-13.8%	-2.8%	-29.4%	-2.6%	13.9%	
Weighted Average/Total				4.2%	0.4%	-17.2%	-12.4%	0.6%	-2.1%	-15.0%	-19.3%	0.0%	-29.0%	10.8%	14.8%	
Emerging Asia																
AIS	IL	Bt37.00	2,501	4.2%	15.6%	-9.2%	-11.9%	7.7%	7.0%	-23.0%	-28.0%	0.0%	-13.8%	18.8%	17.1%	
Bharti Tele-Ventures	IL	Rs22.25	856	-9.0%	-28.8%	NA	NA	-18.9%	-31.3%	NA	NA	-13.2%	-58.2%	NA	NA	
Celcom	NR	Rm2.40	1,253	0.8%	17.1%	24.6%	30.9%	2.1%	17.0%	35.9%	29.8%	-3.4%	-12.3%	52.5%	59.9%	
China Mobile (HK)	U	HK\$20.60	51,950	5.9%	14.4%	-25.0%	-24.4%	1.5%	3.8%	-14.5%	-15.0%	1.7%	-15.0%	3.0%	4.6%	
China Unicom	U	HK\$5.60	9,013	0.9%	19.1%	-34.9%	-37.4%	9.0%	8.1%	-25.8%	-29.6%	-3.3%	-10.3%	-6.9%	-8.5%	
Indosat	IL	Rp8,000	918	2.6%	-10.1%	-15.3%	-4.2%	1.4%	1.0%	-11.1%	-2.2%	-1.6%	-39.5%	12.6%	24.8%	
Maxis	IL	Rm5.80	3,741	2.7%	6.4%	NA	NA	0.7%	6.4%	NA	NA	-1.6%	-23.0%	NA	NA	
TAC	IL	\$0.57	270	2.7%	17.5%	-59.9%	-56.8%	-9.9%	9.5%	-77.8%	-79.1%	-1.5%	-11.9%	-31.9%	-27.9%	
Average/Total			70,503	1.4%	6.4%	-19.9%	-17.3%	-0.8%	2.7%	-19.4%	-20.7%	-2.9%	-23.0%	8.0%	11.7%	
Weighted Average/Total				4.7%	13.9%	-23.2%	-22.9%	2.4%	4.4%	-14.6%	-15.6%	0.5%	-15.5%	3.0%	4.2%	
Japan																
NTT DoCoMo	IL	Y224,000	91,616	1.4%	7.7%	-27.3%	-32.5%	0.8%	17.0%	-11.5%	-15.5%	-2.9%	-21.7%	0.7%	-3.6%	
Latin America																
America Movil	OP	\$14.13	9,185	3.9%	17.0%	-27.5%	-10.6%	-0.3%	2.1%	-10.8%	8.9%	-0.3%	-12.4%	0.5%	18.4%	
Tele Celular Sul	IL	\$7.75	265	5.4%	17.4%	-52.6%	-43.0%	-6.9%	2.5%	-41.7%	-30.6%	1.2%	-12.0%	-24.6%	-14.1%	
Tele Centro-Oeste Celular	IL	\$3.52	441	7.6%	51.7%	-49.7%	-47.5%	13.2%	32.5%	-38.2%	-36.0%	3.4%	22.3%	-21.8%	-18.5%	
Tele Leste Celular	U	\$5.75	55	9.5%	16.2%	-71.9%	-67.1%	1.0%	1.4%	-65.4%	-60.0%	5.3%	-13.2%	-43.9%	-38.2%	
Tele Nordeste Celular	IL	\$15.35	264	8.1%	19.9%	-45.5%	-37.6%	6.4%	4.7%	-33.1%	-24.0%	3.9%	-9.5%	-17.6%	-8.6%	
Tele Norte Celular	U	\$4.13	28	2.7%	12.2%	-81.9%	-80.8%	3.1%	-2.0%	-77.8%	-76.6%	-1.5%	-17.2%	-54.0%	-51.8%	
Telemig Celular	OP	\$16.81	281	-2.3%	25.5%	-55.3%	-48.4%	-5.1%	9.6%	-45.1%	-37.1%	-6.5%	-3.9%	-27.4%	-19.4%	
Teleesp Celular	IL	\$2.85	1,336	11.3%	57.5%	-68.3%	-58.5%	1.6%	37.5%	-61.0%	-49.5%	7.1%	28.1%	-40.3%	-29.5%	
Average/Total			11,854	5.8%	27.2%	-56.6%	-49.2%	1.6%	11.0%	-46.6%	-38.1%	1.6%	-2.2%	-28.6%	-20.2%	
Weighted Average/Total				4.9%	23.1%	-34.8%	-20.0%	0.3%	7.5%	-19.9%	-2.6%	0.7%	-6.3%	-6.9%	9.0%	
Wireless Average/Total																
				493,355	4.1%	20.9%	-24.8%	-18.9%	4.2%	10.3%	-8.1%	-3.0%	-0.1%	-8.5%	3.2%	10.0%
Wireless Weighted Average/Total					5.0%	30.5%	-23.8%	-24.2%	8.0%	19.4%	-6.4%	-6.4%	0.8%	1.1%	3.9%	4.4%

Source: Bloomberg, Goldman Sachs Research estimates

Goldman Sachs Research global coverage universe Distribution of ratings/investment banking relationships



Source: Goldman Sachs

As of September 30, 2002

Analyst coverage

Companies that the analysts mentioned in this document follow

Covering Analyst: Tim Storey	
Company name	Ticker
Bharti Tele-Ventures	BRTI.BO
China Mobile (HK)	0941.HK
China Mobile (HK) (ADS)	CHL
China Unicom	0762.HK
China Unicom (ADS)	CHU
Far EastOne Telecommunications	4904.TWO
Mahanagar Telephone Nigam	MTNL.BO
Mahanagar Telephone Nigam (ADR)	MTE
Taiwan Cellular	3045.TW
UTStarcom	UTSI
Videsh Sanchar Nigam	VSNL.BO
Videsh Sanchar Nigam (ADR)	VSL

Covering Analyst: Radek Barnert	
Company name	Ticker
Advanced Info Service	ADVA.BK
Advanced Info Service (Foreign)	ADVAf.BK
PCCW Limited	0008.HK
PCCW Limited (ADR)	PCW
Philippine Long Distance Telephone	TEL.PS
Philippine Long Distance Telephone (ADR)	PHI
SmarTone	0315.HK
TelecomAsia	TA.BK
TelecomAsia (Foreign)	TAf.BK
Total Access Communication	TACC.SI

Covering Analyst: Jason Billings	
Company name	Ticker
Celcom (Malaysia)	CECM.KL
Indonesian Satellite Corp.	ISAT.JK
Indonesian Satellite Corp. (ADR)	IIT
Maxis Communications	MXSC.KL
Singapore Telecom	TELE.SI
Singapore Telecom	SGT.AX
Taiwan Cellular	3045.TW
Telekom Malaysia	TLMM.KL
Telekomunikasi Indonesia	TLKM.JK
Telekomunikasi Indonesia (ADR)	TLK

Covering Analyst: Matthew Jamieson	
Company name	Ticker
Hanaro Telecom	33630.KQ
Hanaro Telecom (ADS)	HANA
KT Corp	30200.KS
KT Corp (ADR)	KTC
KT Freetel	32390.KQ
LG Telecom	32640.KQ
SK Telecom	17670.KS
SK Telecom (ADR)	SKM

Covering Analyst: Stephen Wood	
Company name	Ticker
Hutchison Telecommunications Australia	HTA.AX
Telecom Corp. of New Zealand	TEL.NZ
Telstra	TLS.AX

Covering Analyst: Yoshio Ando	
Company name	Ticker
Anritsu	6754.T
Crosswave Communications	CWCi
Internet Initiative Japan	IIJi
Japan Telecom Holdings	9434.T
KDDI	9433.T
Nippon Telegraph & Telephone	9432.T
NTT DoCoMo	9437.T

Covering Analyst: Keita Arisawa	
Company name	Ticker
Internet Initiative Japan	IIJi

Covering Analyst: James Golob	
Company name	Ticker
Deutsche Telekom	DTEGN.DE
Portugal Telecom	PTCO.IN
Telefonica	TEF.MC
Telefonica Moviles	TEM.MC

Covering Analyst: Deborah Collins	
Company name	Ticker
France Telecom	FTE.PA
Olivetti	OLIV.MI
Royal KPN NV	KPN.AS
TDC	TDC.CO
Tele2 (B)	TEL2B.ST
Telecom Italia	TIT.MI
Telecom Italia (Savings)	TITN.MI
Telecom Italia Mobile	TIM.MI
Telenor	TEL.OL
Telia	TLIA.ST

Source: Goldman Sachs Research.

Analyst coverage

Companies that the analysts mentioned in this document follow

Covering Analyst: Freya Guinness		Covering Analyst: Simon Weeden		Covering Analyst: Matthew Bloxham	
Company name	Ticker	Company name	Ticker	Company name	Ticker
BT Group (ADS)	BTY	Equant (France)	EQU.PA	BT Group (ADS)	BTY
BT Group Plc	BT.L	Equant (US)	ENT	BT Group Plc	BT.L
Cable & Wireless	CW.L	Europolitan	EURO.ST	Cable & Wireless	CW.L
Cable & Wireless (ADR)	CWP	mmO2	OOM.L	Cable & Wireless (ADR)	CWP
Colt Telecom plc	CTM.L	mmO2 (ADR)	OOM	Colt Telecom plc	CTM.L
Colt Telecom plc (ADS)	COLT	Mobistar	MSTAR.BR	Colt Telecom plc (ADS)	COLT
Kingston Communications (Hull) plc	KCOM.L	Orange SA	ORA.PA	Equant (France)	EQU.PA
mmO2	OOM.L	Orange SA	OGE.L	Equant (US)	ENT
mmO2 (ADR)	OOM	Panafon	PANR.AT	Jazztel	JAZ.MC
Thus	THUS.L	Telecom Italia Mobile	TIM.MI	Kingston Communications (Hull) plc	KCOM.L
		Vodafone	VOD.L	Song Networks	SONW.ST
		Vodafone (ADR)	VOD	Thus	THUS.L
		Vodafone-Libertel	LTEL.AS		
		Vodafone-Telecel	TELN.IN		
Covering Analyst: James Sawtell		Covering Analyst: Sergei Arsenyev		Covering Analyst: Michael Blank	
Company name	Ticker	Company name	Ticker	Company name	Ticker
Deutsche Telekom	DTEGN.DE	Cesky Telecom	SPTT.PR	Deutsche Telekom	DTEGN.DE
Orange SA	ORA.PA	Cosmote	COSR.AT	Europolitan	EURO.ST
Orange SA	OGE.L	ECMS Mobinil	EMOB.CA	mmO2	OOM.L
Portugal Telecom	PTCO.IN	Matav	MTAV.BU	mmO2 (ADR)	OOM
Sonera	SRA1V.HE	Mobile Telesystems	MBT	Mobistar	MSTAR.BR
Swisscom	SCMZN.VX	OTE	OTER.AT	Panafon	PANR.AT
Telefonica	TEF.MC	Panafon	PANR.AT	Vodafone-Libertel	LTEL.AS
Telefonica Moviles	TEM.MC	Stet Hellas (ADR)	STHLY	Vodafone-Telecel	TELN.IN
		TPSA	TPSA.WA		
		Turkcell (ADR)	TKC		
		Vimpel Communications	VIP		

Source: Goldman Sachs Research.

Analyst coverage

Companies that the analysts mentioned in this document follow

Covering Analyst: Mike Meloan	
Company name	Ticker
France Telecom	FTE.PA
Orange SA	ORA.PA
Portugal Telecom	PTCO.IN
Swisscom	SCMZN.VX
TDC	TDC.CO
Telenor	TEL.OL
Telia	TLIA.ST

Covering Analyst: Dimitrije Mitrinovic	
Company name	Ticker
Deutsche Telekom	DTEGN.DE
Jazztel	JAZ.MC
Song Networks	SONW.ST
Telefonica	TEF.MC
Telefonica Moviles	TEM.MC

Covering Analyst: Andrzej Skiba	
Company name	Ticker
Cesky Telecom	SPTT.PR
Cosmote	COSR.AT
ECMS Mobinil	EMOB.CA
Matav	MTAV.BU
Mobile Telesystems	MBT
OTE	OTER.AT
Panafon	PANR.AT
Stet Hellas (ADR)	STHLY
TPSA	TPSA.WA
Turkcell (ADR)	TKC
Vimpel Communications	VIP

Covering Analyst: Jonathan Rodgers	
Company name	Ticker
Olivetti	OLIV.MI
Royal KPN NV	KPN.AS
Tele2 (B)	TEL2B.ST
Telecom Italia	TIT.MI
Telecom Italia (Savings)	TITN.MI
Telecom Italia Mobile	TIM.MI

Covering Analyst: Jonathan Dorfman	
Company name	Ticker
BCE, Inc.	BCE
BCE, Inc. (Toronto)	BCE.CA
Rogers AT&T Wireless	RCN
Rogers AT&T Wireless (Toronto)	RCM__B.C A
TELUS Corp. (ADR)	TU
TELUS Corp. (Toronto)	T.CA

Covering Analyst: Frank J. Governali	
Company name	Ticker
Alaska Communications Sys. Gr.	ALSK
ALLTEL Corp.	AT
AT&T Corp.	T
BellSouth Corp.	BLS
CenturyTel Inc.	CTL
Commonwealth Tel Enterprises	CTCO
Level 3 Communications, Inc.	LVLTL
Qwest Communications Intl.	Q
SBC Communications, Inc.	SBC
Sprint FON Group	FON
Verizon Communications	VZ

Covering Analyst: Daniel Henriques	
Company name	Ticker
America Movil, S.A. de C.V. (ADS)	AMX
AT&T Latin America Corp.	ATTL
Brasil Telecom Part. (ADS)	BRP
CanTV (ADS)	VNT
Corp. Interam Entre, S.A. de C.V.	CIEB.MX
Embratel Participacoes	EMT
Grupo Televisa, S.A. (ADR)	TV
Net Servicos de Comunicacao S.A.	NETC
T.V. Azteca, S.A. de C.V. ADR	TZA
Tele Celular Sul Participacoes	TSU
Tele Centro Oeste Participacoes	TRO
Tele Leste Celular Participacoes	TBE
Tele Nordeste Participacoes	TND
Tele Norte Celular Participacoes	TCN
Tele Norte Leste Participacoes	TNE
Telecom Argentina (ADS)	TEO
Telefonos de Mexico (ADS)	TMX
Telemig Celular Participacoes	TMB
Telesp Celular Participacoes	TCP

Source: Goldman Sachs Research.

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